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FIG. 1A

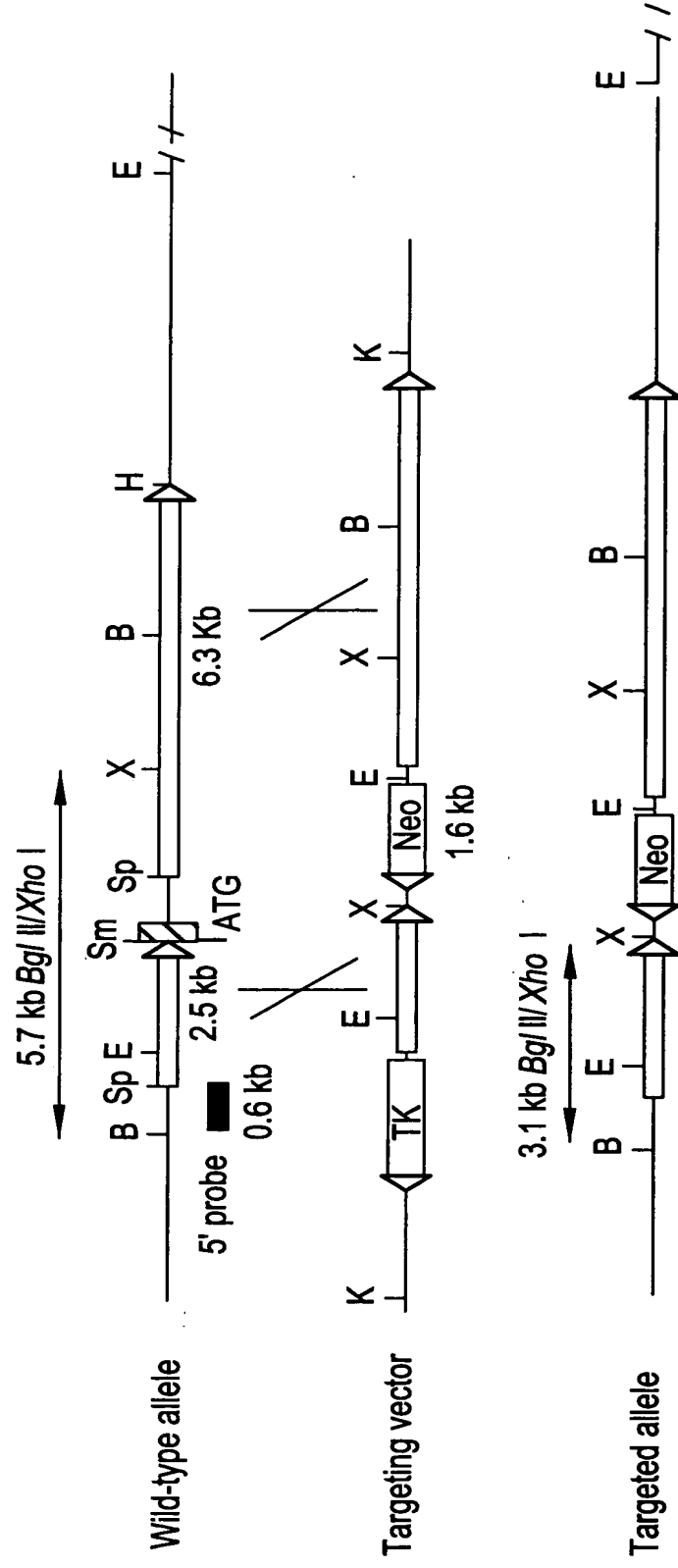


FIG. 1B

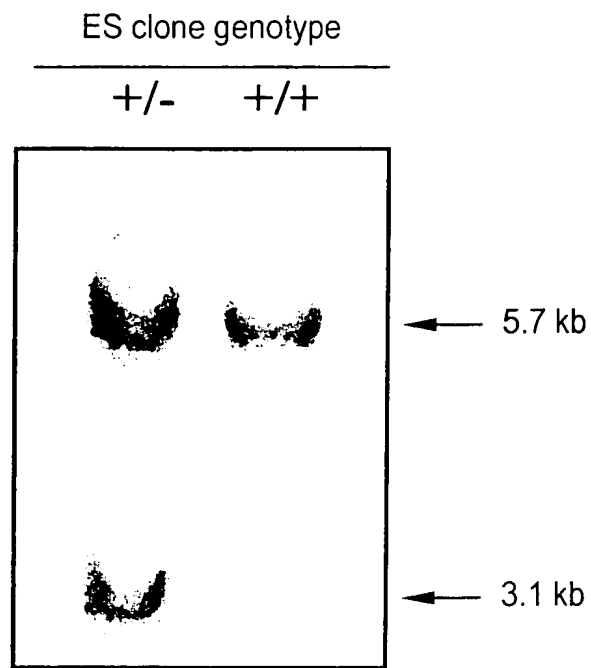


FIG. 1C

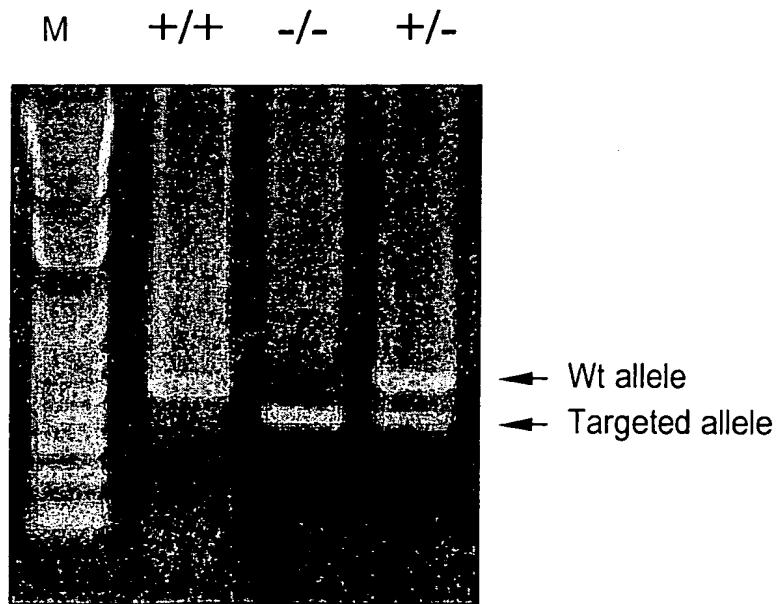


FIG. 1D

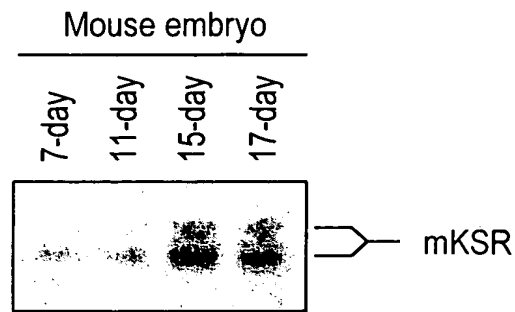


FIG. 1E

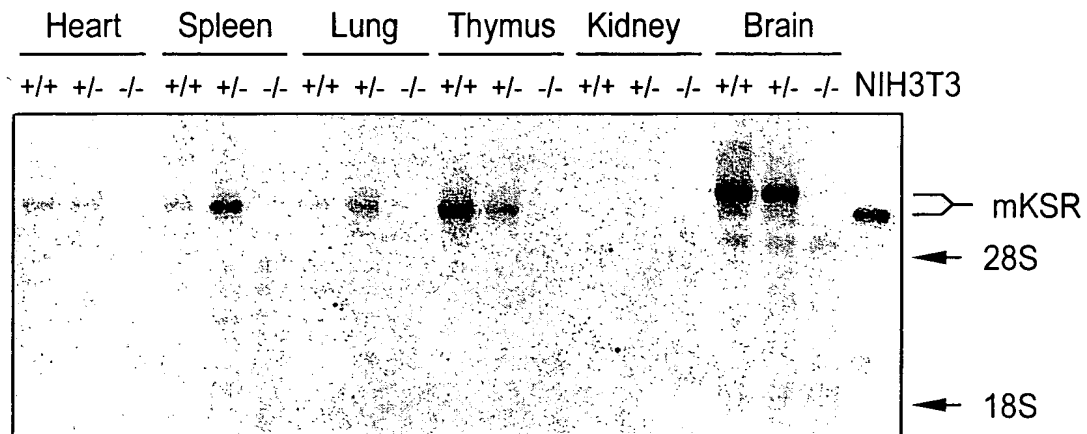


FIG. 1F

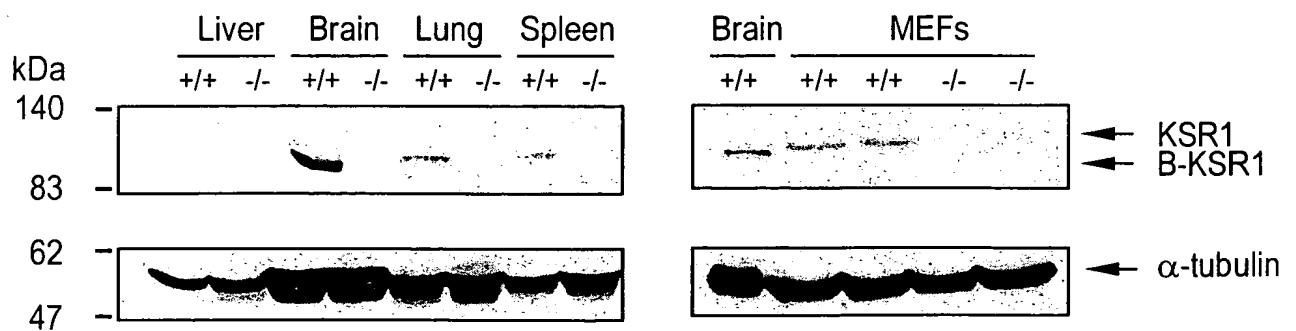


FIG. 2A

a - KSR +/+



FIG. 2B

b - KSR -/-



FIG. 2C

c - KSR -/-



FIG. 2D

d - EGFR -/-

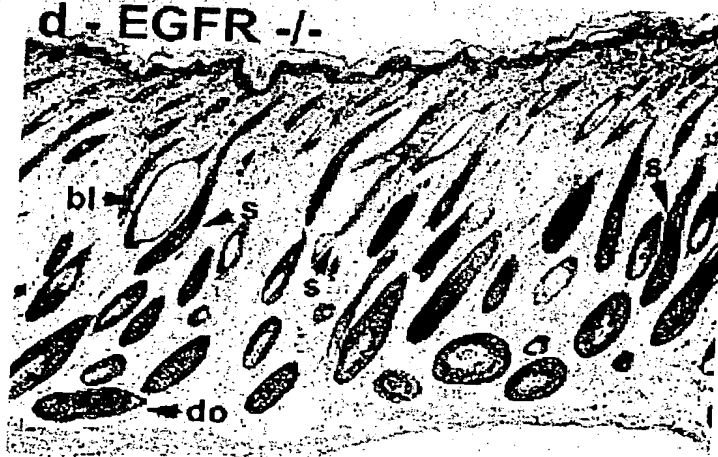


FIG. 3A

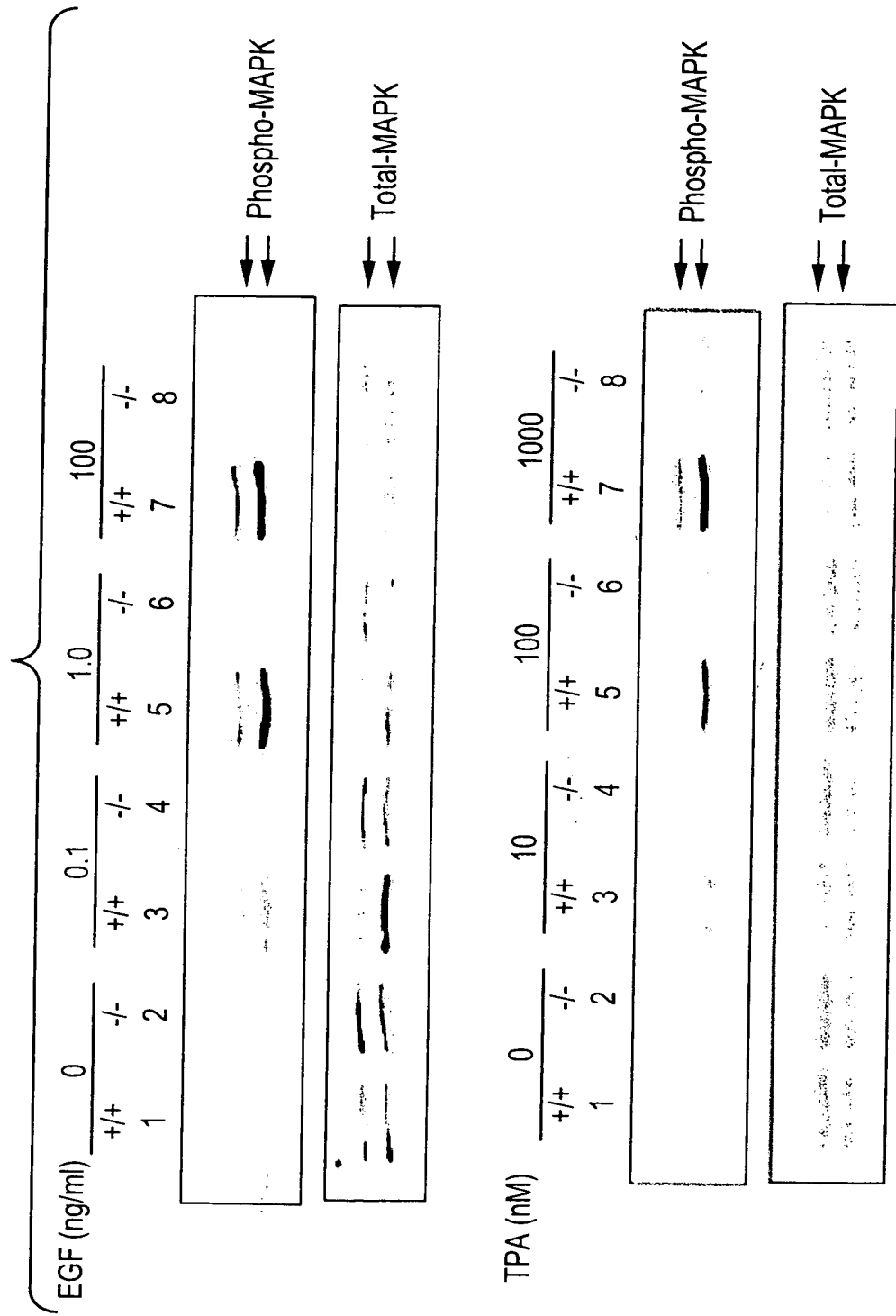


FIG. 3B

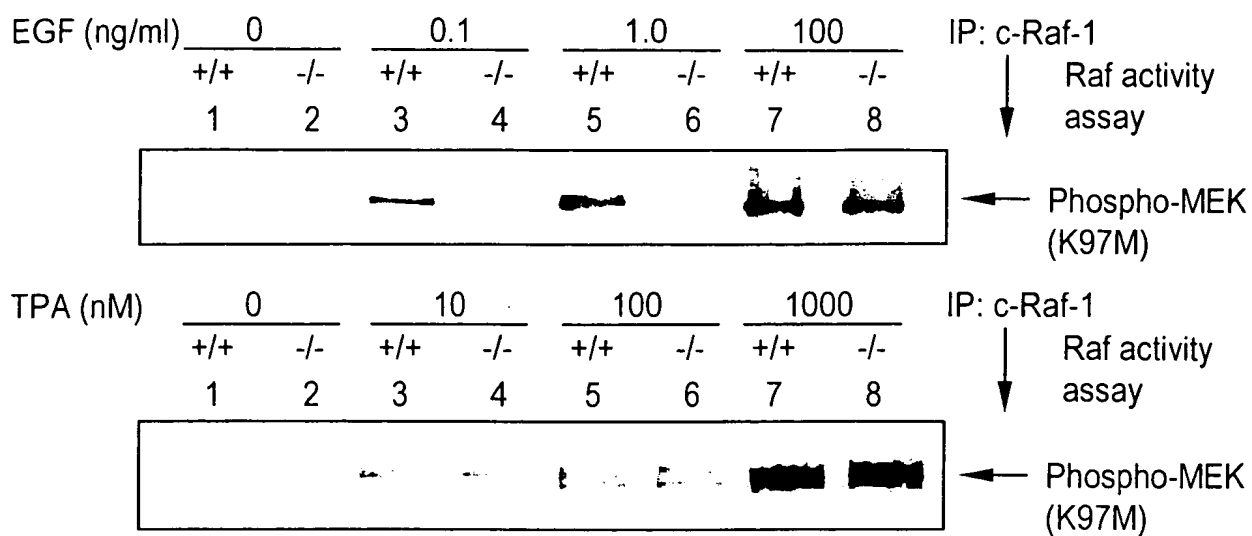


FIG. 3C

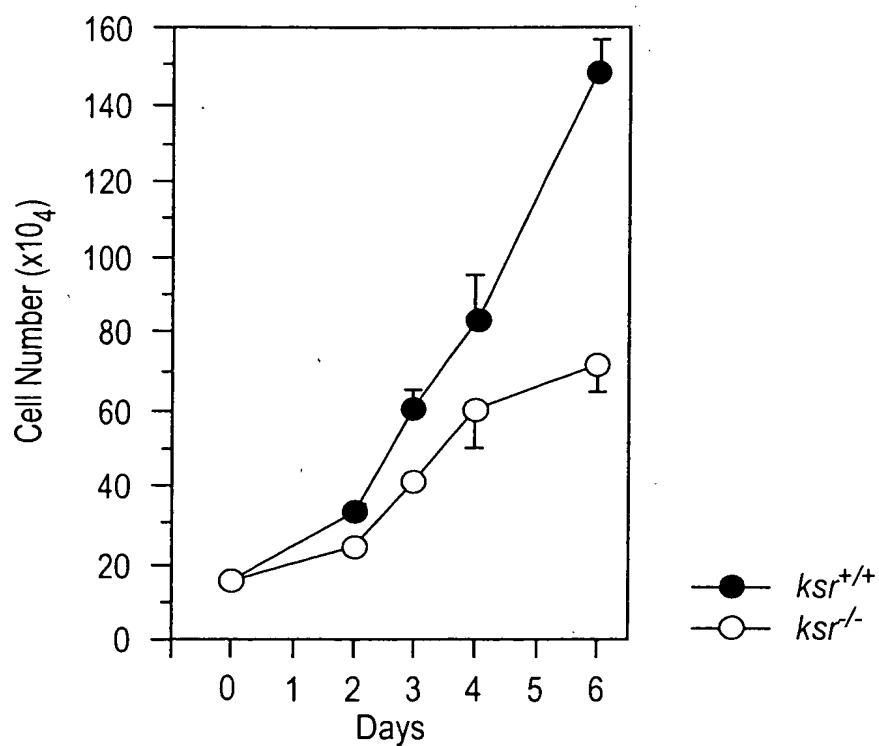


FIG. 4A

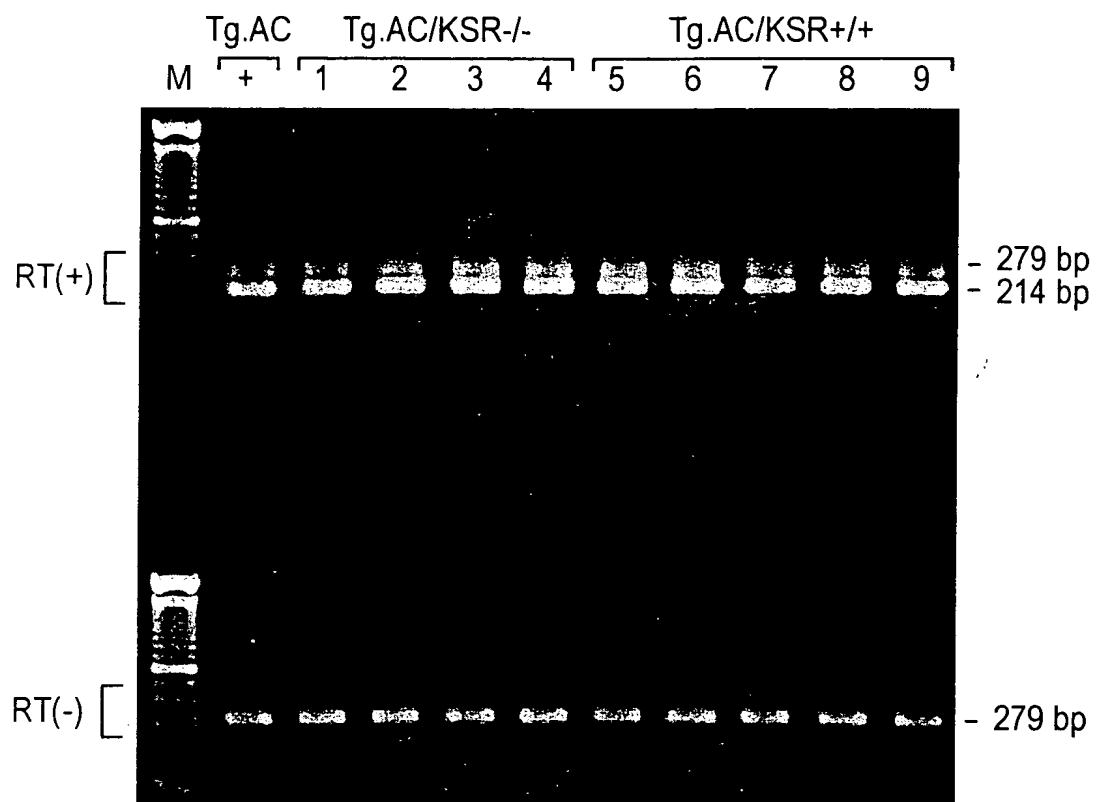


FIG. 4B

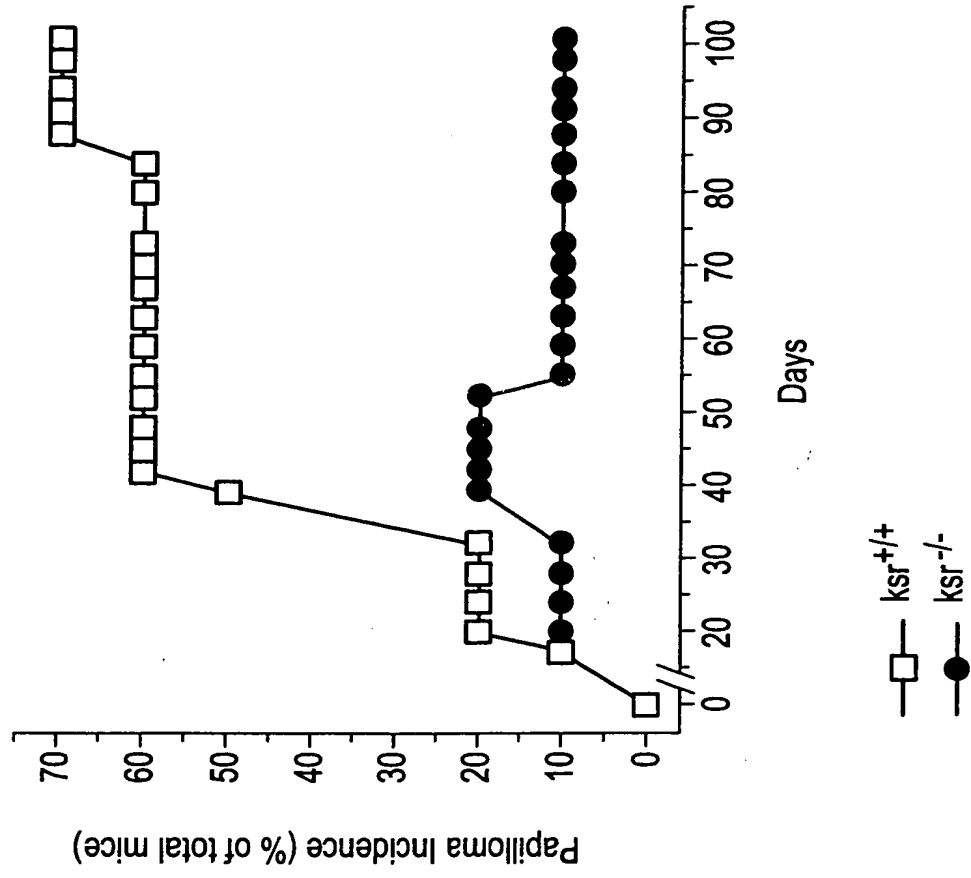


FIG. 5A

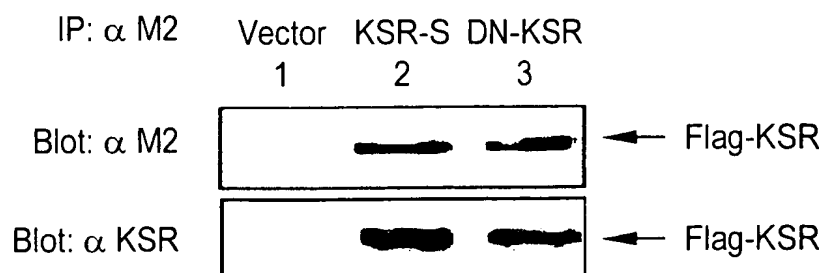


FIG. 5B

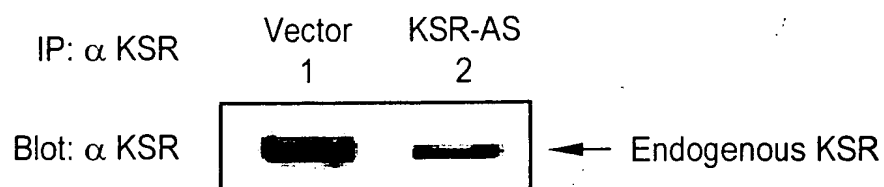


FIG. 5C

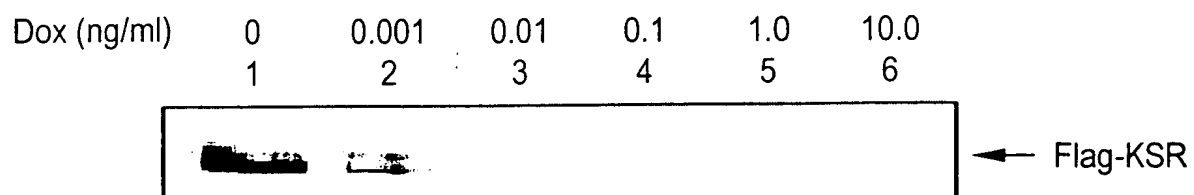


FIG. 5D

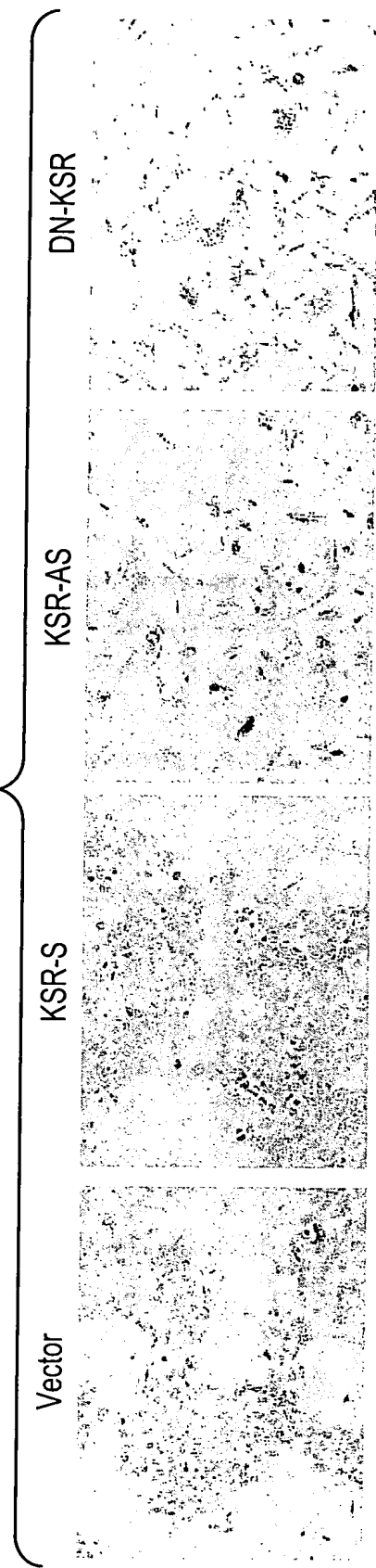


FIG. 5E



FIG. 6A

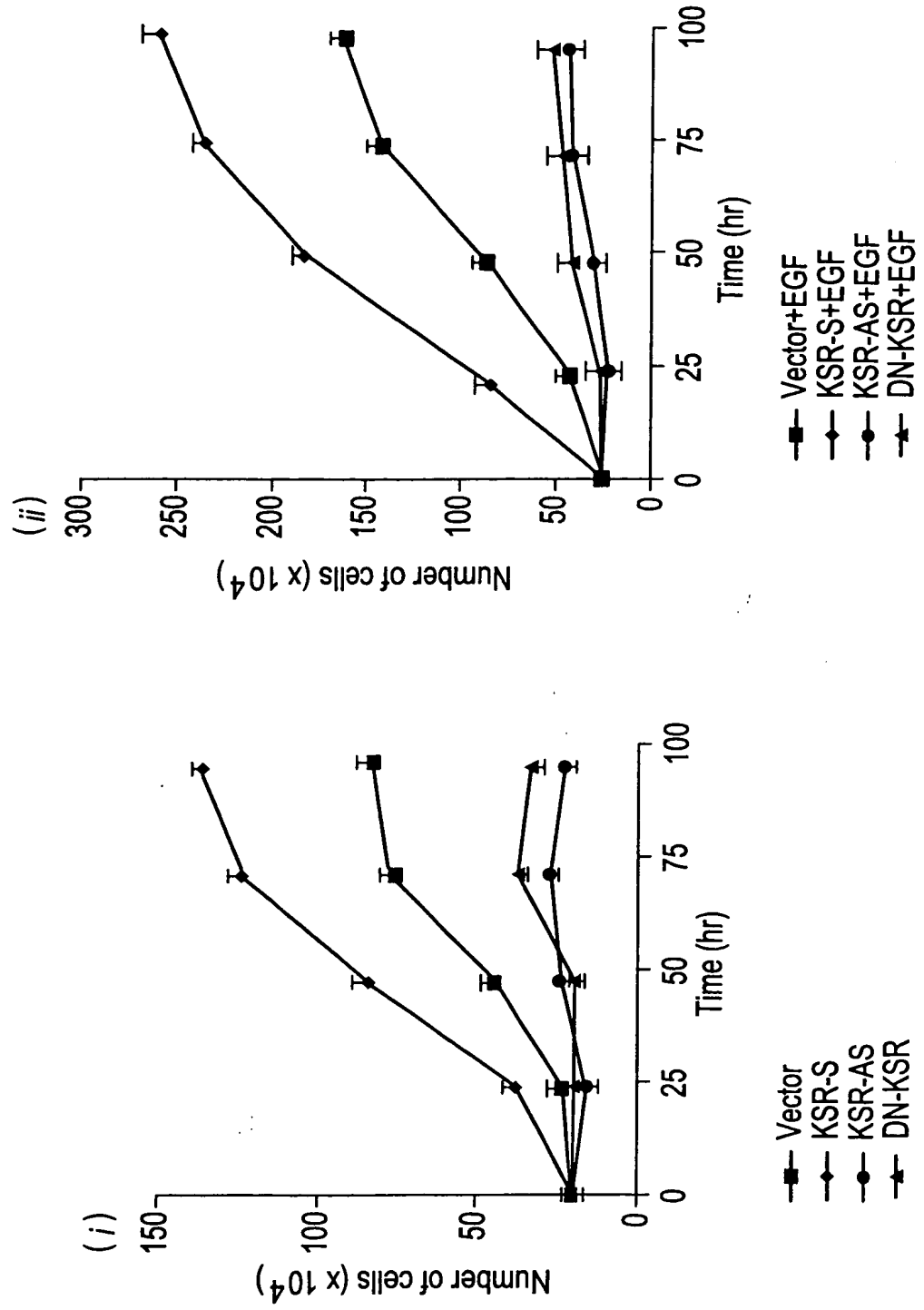


FIG. 6B

	% G1	% S	% G2
Vector	40.1	45.1	14.8
KSR-S	25.2	60.8	14.0
KSR-AS	16.4	23.2	60.4
DN-KSR	24.2	24.8	51.0

FIG. 6C

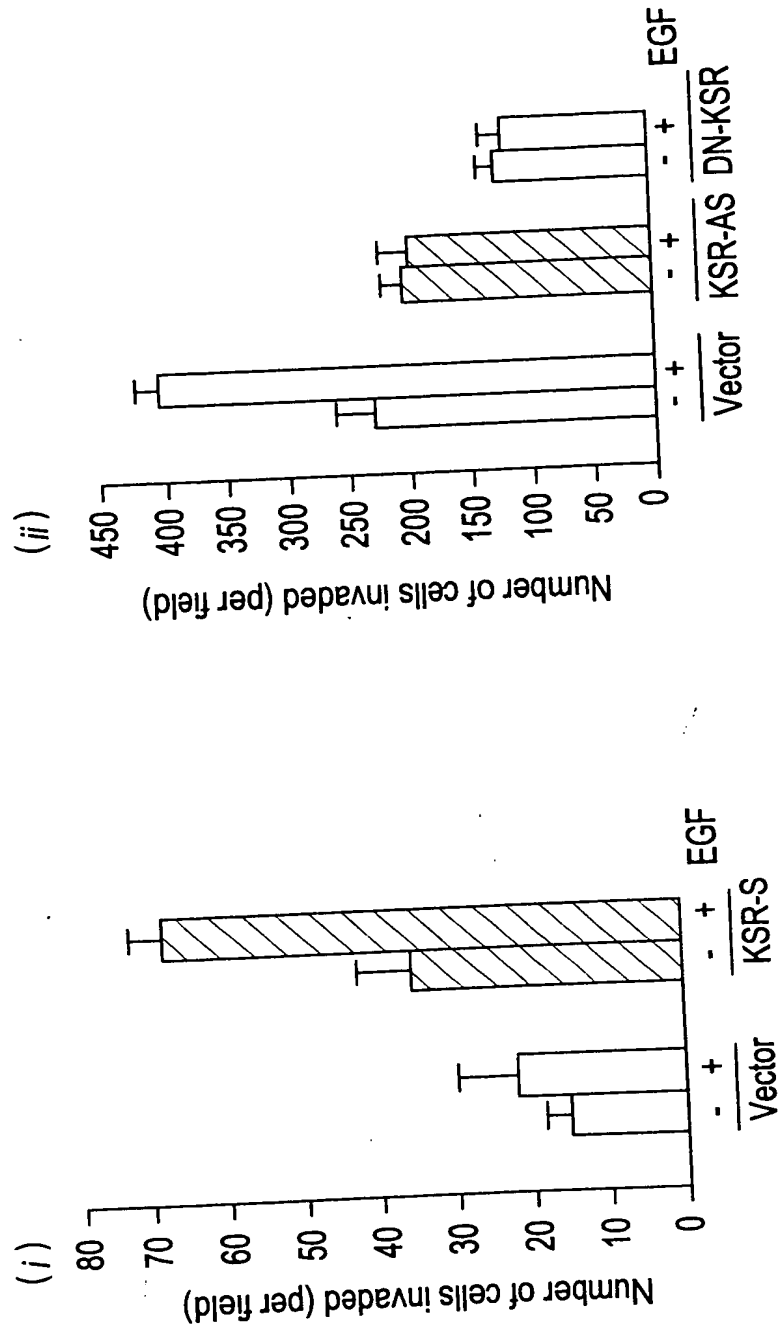


FIG. 6D

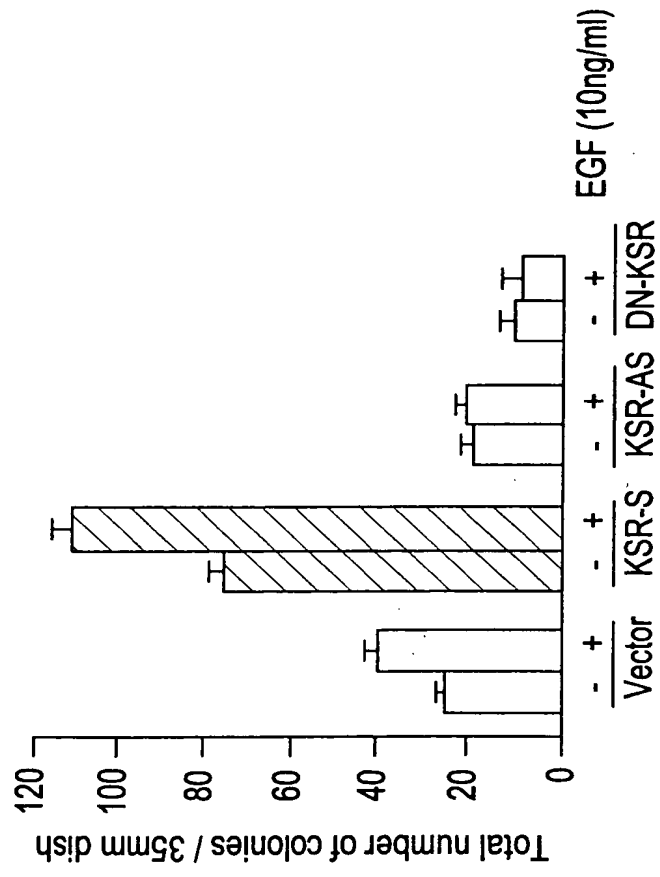
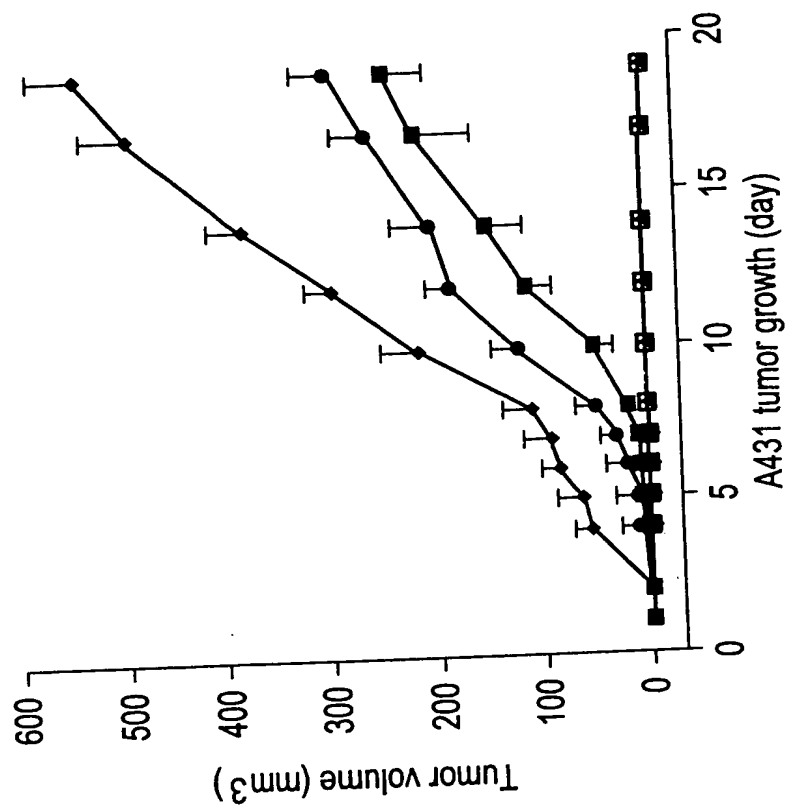


FIG. 7A



- Vector
- KSR-S
- KSR-S+Dox
- KSR-AS
- DN-KSR

FIG. 7B

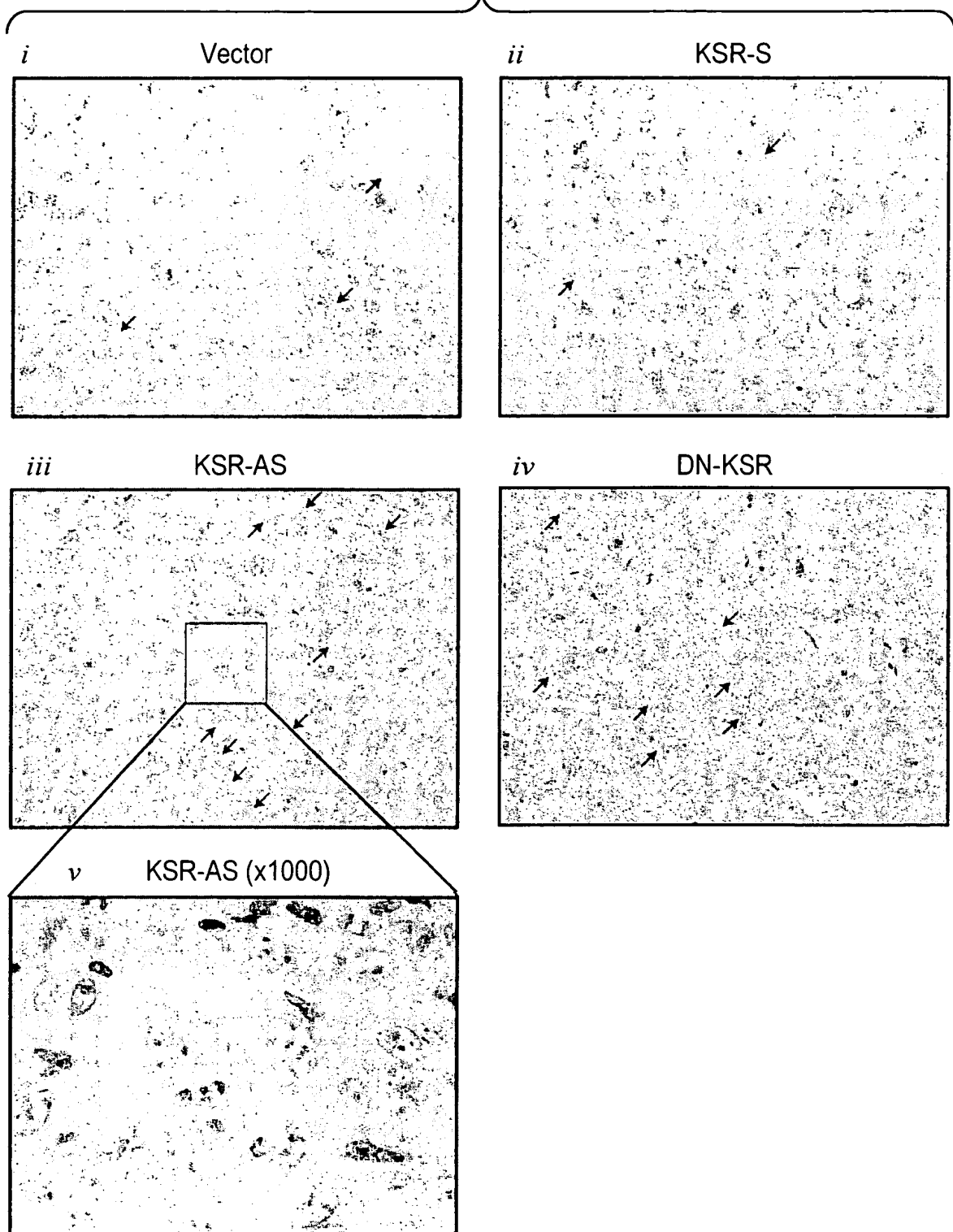
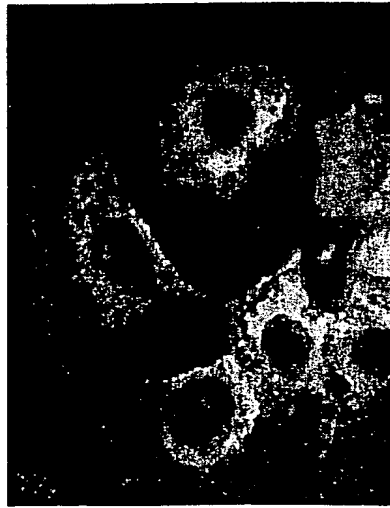
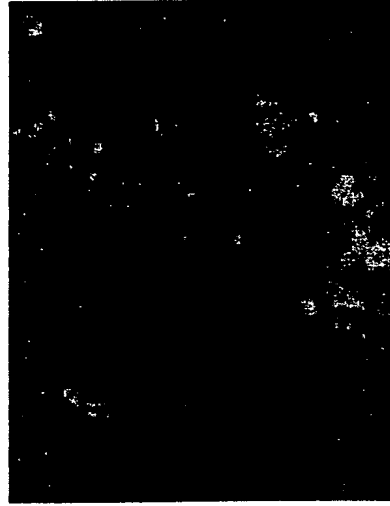


FIG. 8A

NT



KSR-AS ODN



Control ODN

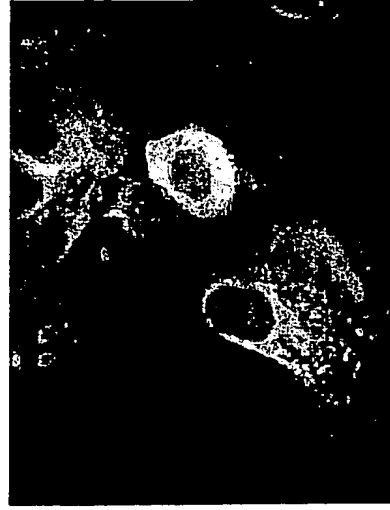


FIG. 8B

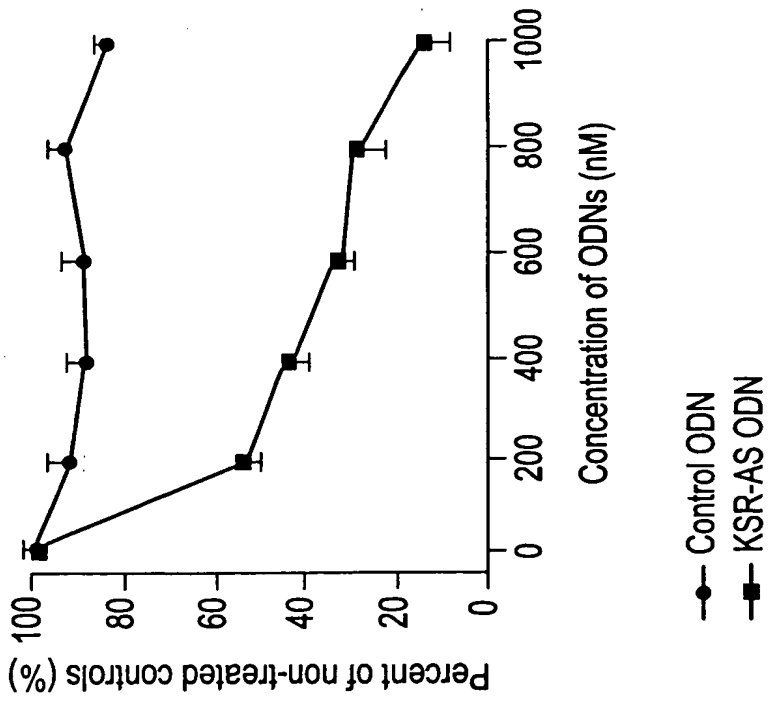


FIG. 8C

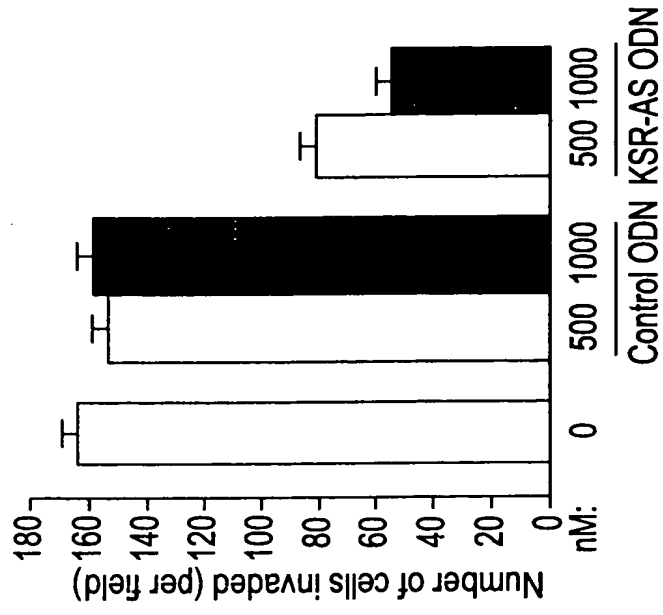


FIG. 8D

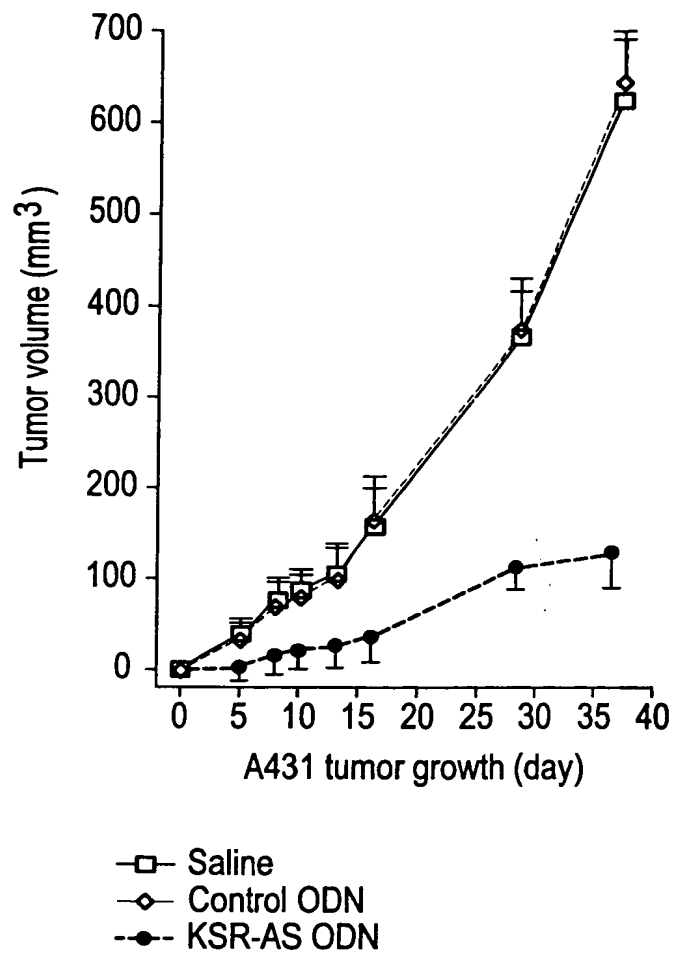


FIG. 9A

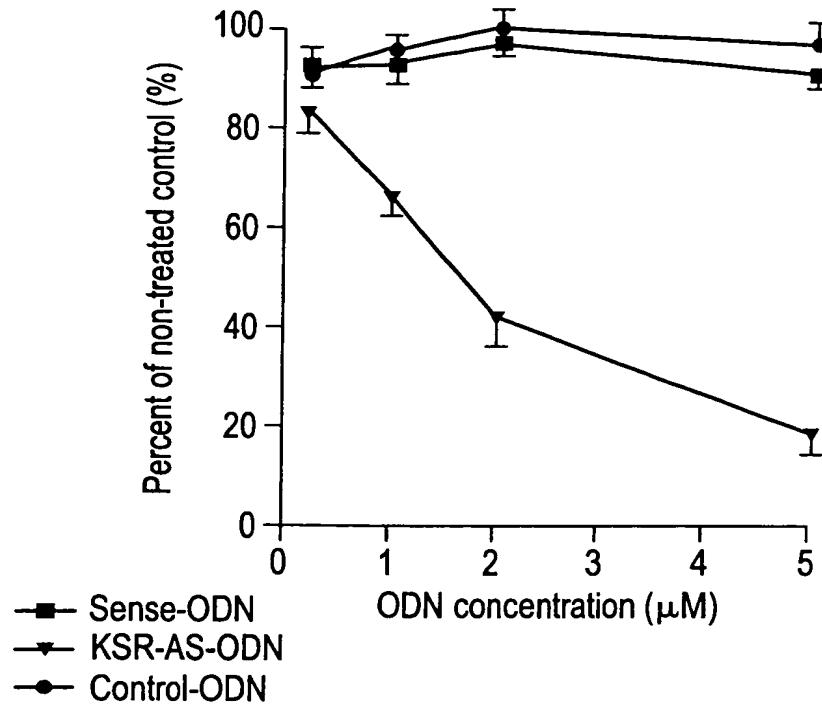


FIG. 9B

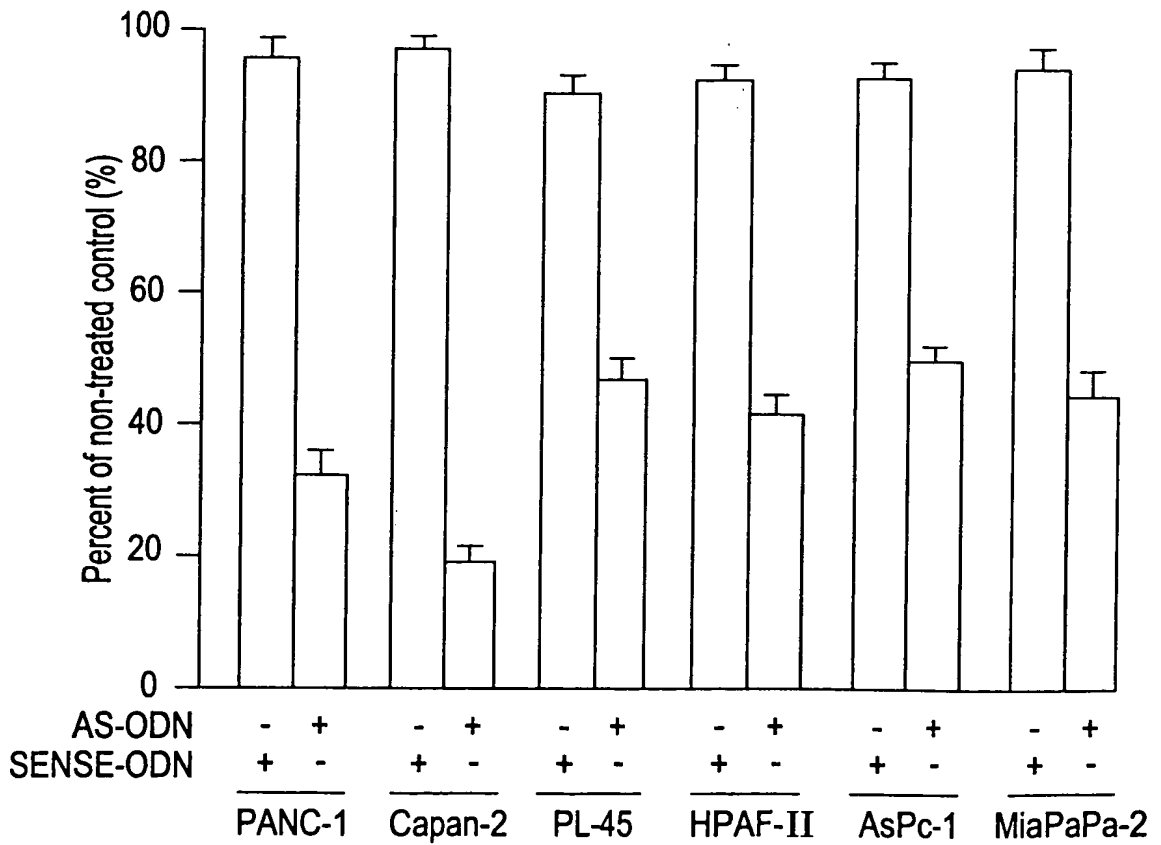


FIG. 9C

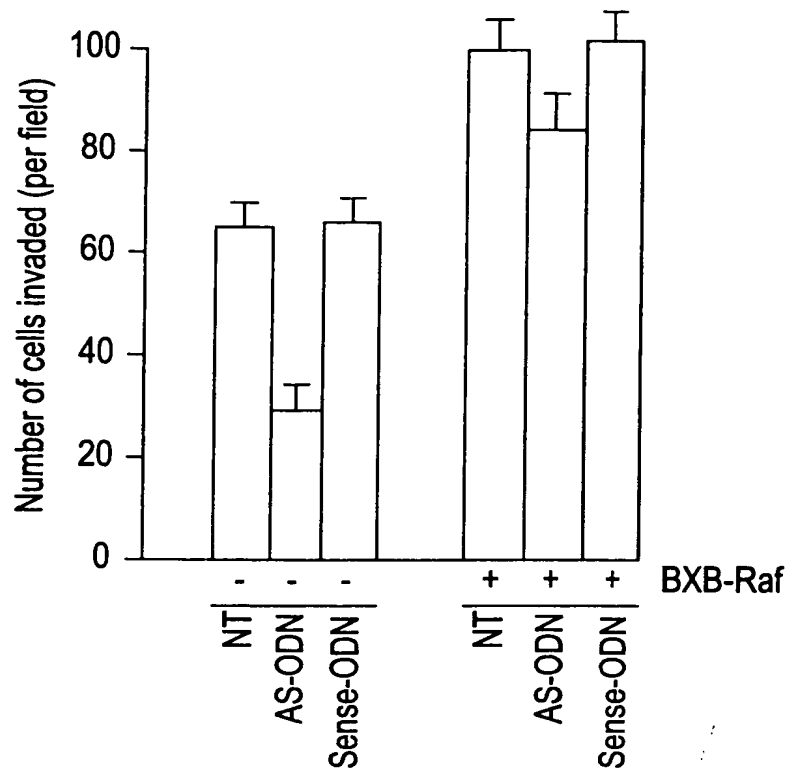


FIG. 9D

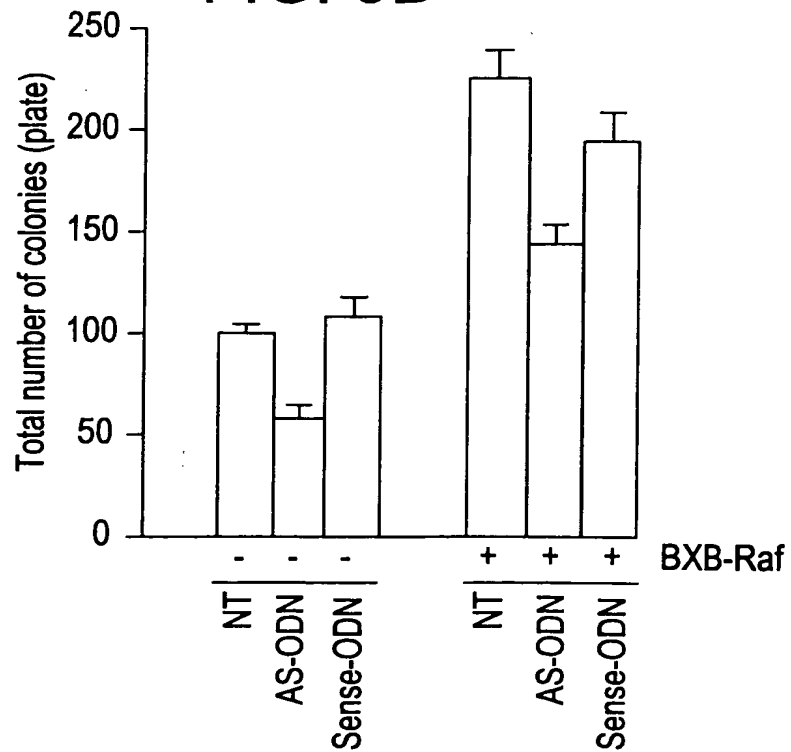


FIG. 9E

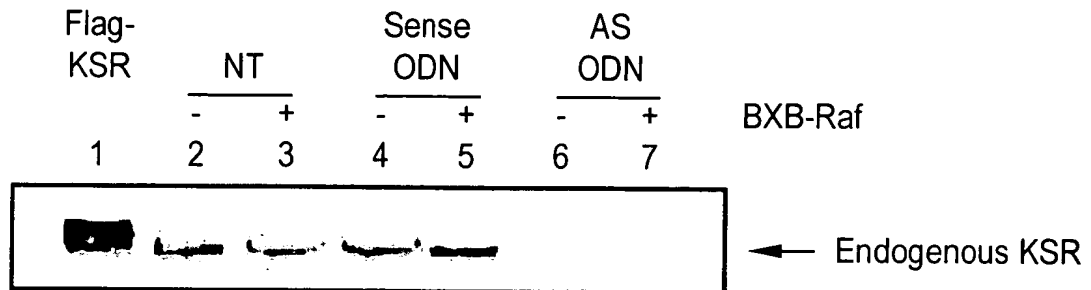


FIG. 9F

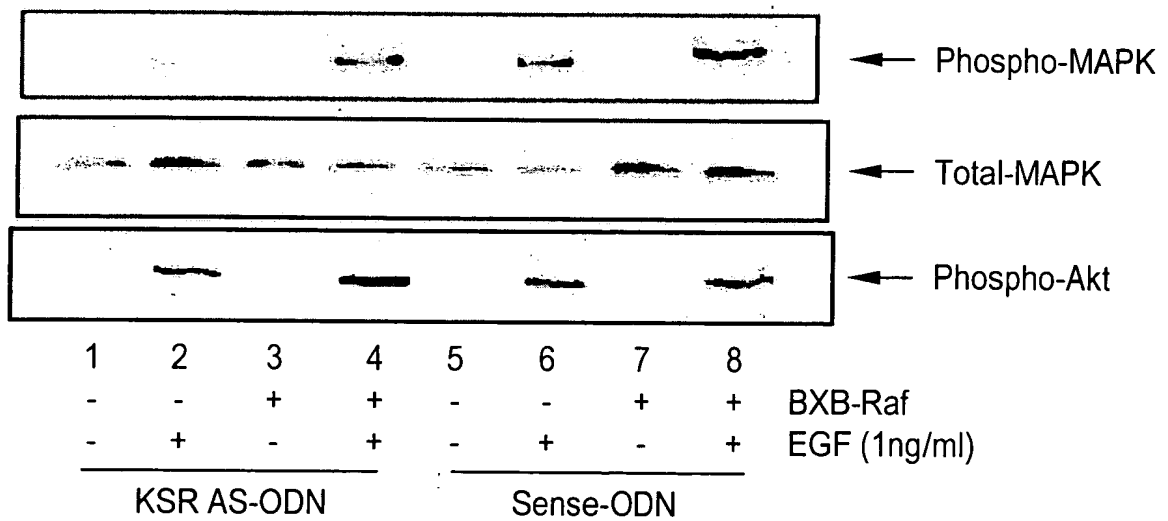


FIG. 10A

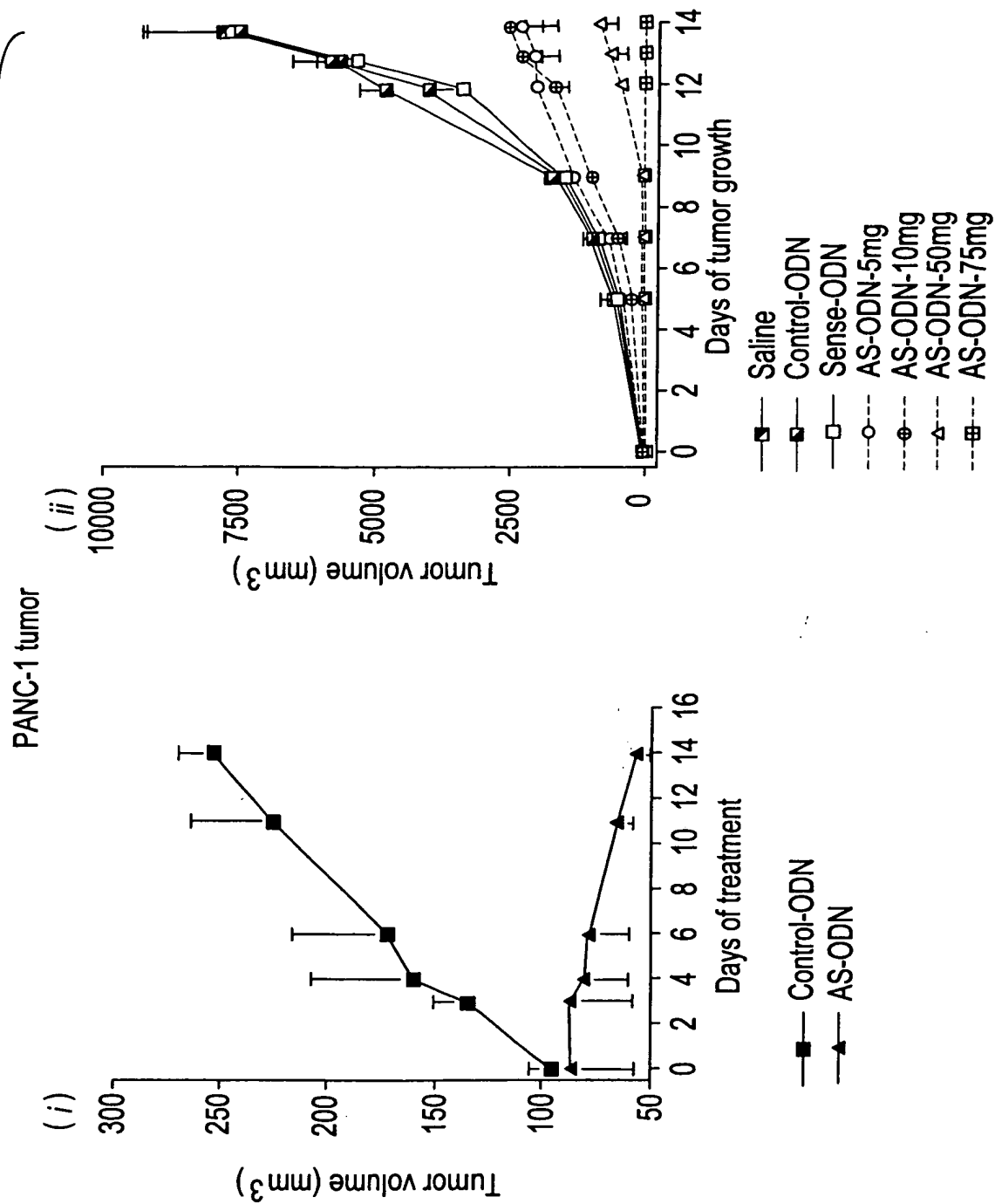


FIG. 10B

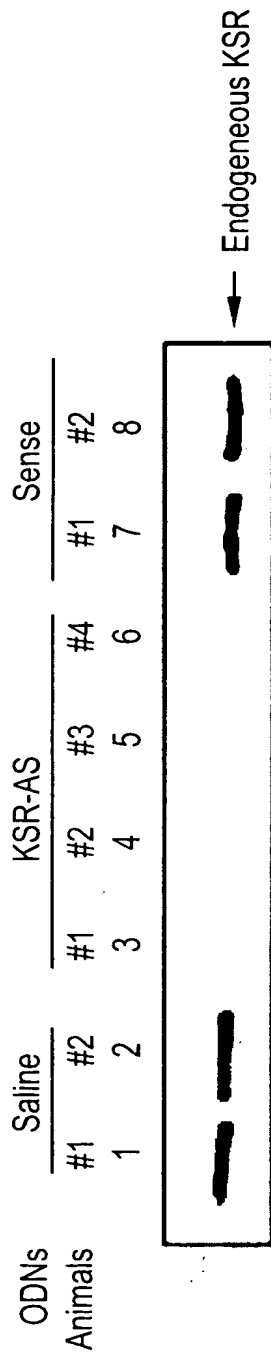


FIG. 10C

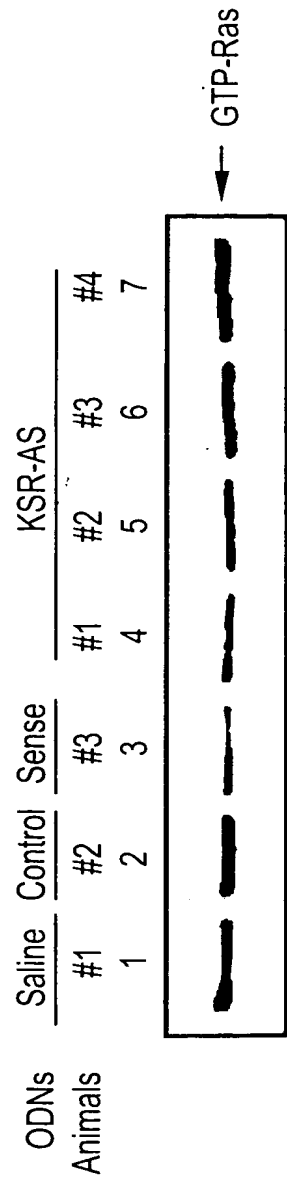
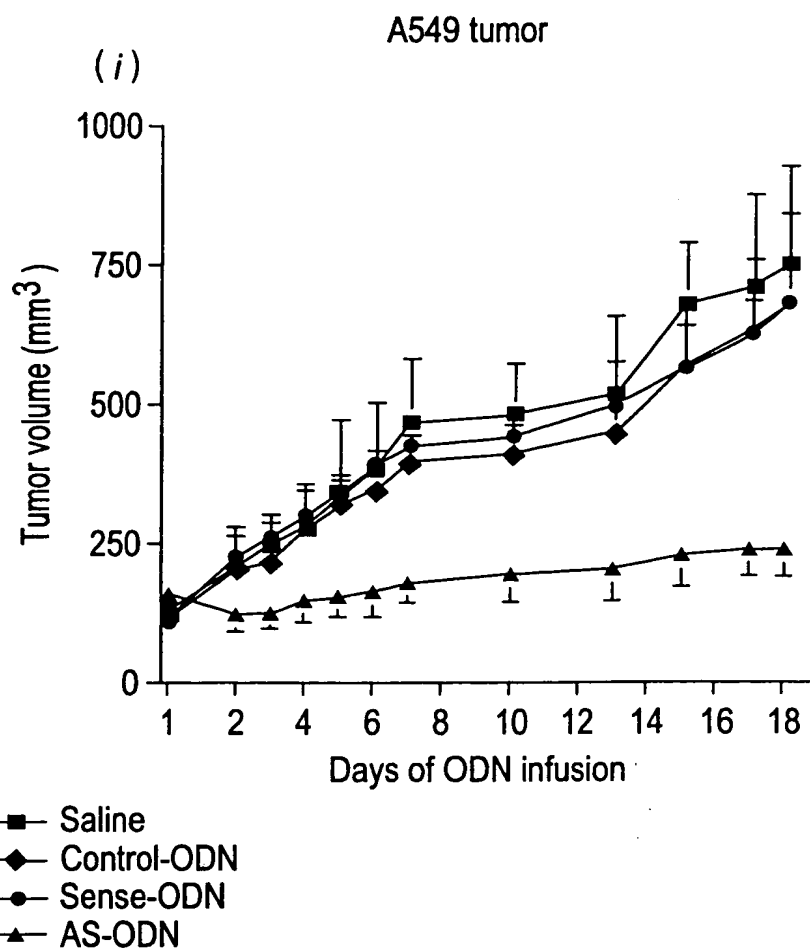


FIG. 10D



(ii) Number of lung metastases foci
(whole lung surface)

Dose of infusion (mg/ kg /Day)	Sense-ODNs	AS-ODN	% inhibition
10	7.4 ± 1.4	2.5 ± 0.6	65
25	10.2 ± 1.8	1.4 ± 0.5	86

**** FIG.11-1

Human MGEK-EGGGGGDAAAEGGAGAAASRALQQCGQLQ 34
 Mouse MDRAALRAAA K -- V

CA1

Human KLIDISIGSLRGLRTKCAVSNDLTQQEIRTLEAKLVRYICKQRQC 79
 Mouse S K Q S

Human KLSVAPGERTPELNSYPRFSDWLYTFNVRPEVVQEIPRDLTLDAL 124
 Mouse I SD A I QE

Human LEMNEAKVKETLRRCGASGDECGRLQYALTCLRKVTGLGGEHKED 169
 Mouse D A M W TE S Q M

Human SSWSSLDARRESGSGPSTDTLSAASLPWPPGSSQLGRAGNSAQGP 214
 Mouse G I DS -L PM M S----- A T

Human RSISVSALPASDSPTPSFSEGLSDTCIPLHASGRLTPRALHSFIT 259
 Mouse V GL S I

CA2

Human PPTTPQLRRHTKLKPPRTPPPPSRKVFQLLPSFPTLTRSKSHESQ 304
 MouseA

Human LGNRIDDVSSMRFDLSHGSPQMVRDIGLSVTHRFSTKSWLSQVC 349
 Mouse TP K E P L

CA3

Human HVCQKSMIFGVKCKHCRLKCHNKCTKEAPACRISFLPLTRLRTE 394
 Mouse N I A

Human SVPSDINNPNVDRAAEPHFGTLPKALTKEHPPAMNHL DSSSNPSS 439
 Mouse -

CA4

Human TTSSTPSSPAPFPTSSNPSSATTPPNPSPGQRDSRFNFPAAYFIH 484
 Mouse L S -----

Human HRQQFIFPDISAFAHAAPLPEAADGTRLDDQPKADVLEAHEAEAE 529
 Mouse ----- CSC SST S I GV

Human EPEAGKSEAEDDED-EVDDLPSRRPWRGPISRKASQTSVYLQEW 573
 Mouse ED

FIG. 11-2

	I	II	
Human	DDIPFEQVELGEP	IGQGRWGRVHRGRWHGEVAIRLLEMDGHNQDH	618
Mouse			
	III	IV	V
Human	LKLFKKEVMNYRQ	TRHENVVLFMGACMNPPHLAIITSFCKGRTLH	663
Mouse			
		VIa	Vib
Human	SFVRDPKTS	LDINKTRQIAQEIIKGMGYLHAKGIVHKDLKSKNVF	708
Mouse			
	VII	VIII	
Human	YDNGKV	VITDFGLFGISGVVREERRENQLKLSHDWLCYLAPEIVR	753
Mouse			
		IX	
Human	EMTPGKDEDQLP	FSKAADVYAFGTWVYELQARDWPLKNQAAEASI	798
Mouse	I R		F H P L
	X		XI
Human	WQIGSGEGMKRV	LTSLGKEVSEILSACWAFDLQERPSFSLMD	843
Mouse	VR A	G	
Human	MLEKL	PKLNRRLSHPGHFWKSAEL	867
Mouse	R	DINSSKVM	PRFERFGLGTLESGN
Mouse	PKM		

FIG. 12A-1

```

1      GAATTCCCTC GGGGCTTTCC TGCCGAGGCG CCCGTGTCCC CGGGCTCCTC GCCTCGGCCC
61     CCAGCGGCCC CGATGCCGAG GCATGGATAG AGCGGCGTTG CGCGCGGCAG CGATGGGCGA
121    GAAAAAGGAG GGC GGCGGCGG GGGGCGCCGC GGCGGACGGG GGCGCAGGGG CCGCCGTCAG
181    CCGGGCGCTG CAGCAGTGCG GCCAGCTGCA GAAGCTCATC GATATCTCCA TCGGCAGTCT
241    GCGCGGGCTG CGCACCAAGT GCTCAGTGTC TAACGACCTC ACACAGCAGG AGATCCGGAC
301    CCTAGAGGCA AAGCTGGTGA AATACATTTG CAAGCAGCAG CAGAGCAAGC TTAGTGTGAC
361    CCCAAGCGAC AGGACCGCCG AGCTCAACAG CTACCCACGC TTCAGTGA CTGCTGTACAT
421    CTTCAACGTG AGGCCTGAGG TGGTGCAGGA GATCCCCCAA GAGCTCACAC TGGATGCTCT
481    GCTGGAGATG GACGAGGCCA AAGCCAAGGA GATGCTGCGG CGCTGGGGGG CCAGCACGGA
541    GGAGTGACAG CGCCTACAGC AAGCCCTTAC CTGCCTTCGG AAGGTGACTG GCCTGGGAGG
601    GGAGCACAAA ATGGA CTGAGTTC AACAGATGCT CGAGACAGTA GCTTGGGGGCC
661    TCCCATGGAC ATGCTTTCTT CGCTGGGCAG AGCGGGTGCC AGCAGCTCAGG GACCCCGTTC
721    CATCTCCGTG TCCGCCCTGC CTGCCTCAGA CTCTCCGGTC CCGCGCCTCA GTGAGGGCCT
781    CTCGGACTCC TGTATCCCCT TGCACACCAG CGGCGGCTG ACCCCCCGGG CCCTGCACAG
841    CTTTCATCAG CCCCCTACCA CACCCAGCT ACGACGGCAC GCCAAGCTGA AGCCACCAAG
901    GACACCCCCA CCGCCAAGCC GCAAGGTCTT CCAGCTGCTC CCCAGCTTCC CCACACTCAC
961    ACGGAGCAAG TCCACGAGT CCCAGCTGGG AAACCGAATC GACGACGTCA CCCCAGTGAA
1021   GTTTGAATC CCTCATGGAT CCCCACAGCT GGTACGAAGG GATATCGGGC TCTCGGTGAC
1081   GCACAGGTTT TCCACAAAGT CATGGTTGTC ACAGGTGTGC AACGTGTGCC AGAAGAGCAT
1141   GATTTTTTGG GTGAAGTGCA AACACTGCAG GTTAAAATGC CATAACAAGT GCACAAAGGA
1201   AGTCCCCGCC TGCAGGATCA CCTTCTCTCC ACTGGCCAGG CTTCGGAGGA CAGAGTCTGT
1261   CCCGTCAGAT ATCAACAACC CAGTGGACAG AGCAGCAGAG CCCCATTTTG GAACCTTCC
1321   CAAGGCCCTG ACAAGAAGG AGCACCTCC AGCCATGAAC CTGGA CTCA CAGCAACCC
1381   ATCTTCCAGT ACGTCTTCCA CACCTCATC GCGGCGACCT TTCCTGACCT CATCTAATCC
1441   CTCCAGTGCC ACCACGCCTC CCAACCCGTC ACCTGGCCAG CGGGACAGCA GGTTCAGCTT
1501   CCCAGACATT TCAGCCTGTT CTCAGGCAGC CCCGCTGTCC AGCACAGCCG ACAGTACACG
1561   GCTCGACGAC CAGCCCCAAA CAGATGTGCT AGGTGTTTAC GAAGCAGAGG CTGAGGAGCC
1621   TGAGGCTGGC AAGTCAGAGG CAGAGGATGA CGAGGAGGAT GAGGTGGACG ACCTCCCCAG
1681   CTCCCGCCGG CCCTGGAGGG GCCCCATCTC TCGAAAGGCC AGCCAGACCA GCGTTTACCT
1741   GCAAGAGTGG GACATCCCCT TTGAACAGGT GGAAGTGGGC GAGCCCATTG GACAGGGTCG
1801   CTGGGGCCGG GTGCACCGAG GCCGTTGGCA TGGCGAGGTG GCCATTTCGG TGCTGGAGAT
1861   GGACGGCCAC AATCAGGACC ACCTGAAGCT GTTCAAGAAA GAGGTGATGA ACTACCGGCA
1921   GACGCGGCAT GAGAACGTGG TGCTCTTCAT GGGGGCCTGC ATGAACCCAC CTCACCTGGC
1981   CATTATCACC AGCTTCTGCA AGGGGCGGAC ATTGCATTCA TTCGTGAGGG ACCCCAAGAC
2041   GTCTCTGGAC ATCAATAAGA CTAGGCAGAT CGCCCAGGAG ATCATCAAGG GCATGGGTTA
2101   TCTTCATGCA AAAGGCATCG TGCACAAGGA CCTCAAGTCC AAGAATGTCT TCTATGACAA
2161   CGGCAAAGTG GTCATCACAG ACTTCGGGCT GTTTGGGATC TCGGGTGTGG TCCGAGAGGA
2221   ACGGCGCGAG AACC AACTGA AACTGTCACA TGACTGGCTG TGCTACCTGG CCCCCGAGAT
2281   CGTACGAGAA ATGATCCCGG GGCGGGACGA GGACCAGCTG CCCTTCTCCA AAGCAGCCGA
2341   TGTCTATGCA TTCGGGACTG TGTGGTATGA ACTACAGGCA AGAGACTGGC CCTTTAAGCA
2401   CCAGCCTGCT GAGGCCTTGA TCTGGCAGAT TGGAAGTGGG GAAGGAGTAC GGC GCGTCTCT
2461   GGCATCCGTC AGCCTGGGGA AGGAAGTCGG CGAGATCCTG TCTGCCTGCT GGGCTTTTGA
2521   TCTGCAGGAG AGACCCAGCT TCAGCCTGCT GATGGACATG CTGGAGAGGC TGCCCAAGCT
2581   GAACCGGCGG CTCTCCACCT CTGGGCACTT TTGGAAGTCG CTGTGACATTA ACAGCAGCAA
2641   AGTCATGCCC CGCTTTGAAA GGT TTGGCCT GGGGACCCTG GAGTCCGGTA ATCCAAAGAT

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FIG. 12A-2

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2701 GTAGCCAGCC CTGCACGTTT ATGCAGAGAG TGTCTTCCTT TCGAAAACAT GATCACGAAA
2761 CATGCAGACC ACCACCTCAA GGAATCAGAA GCATTGCATC CCAAGCTGCG GACTGGGAGC
2821 GTGTCTCCTC CCTAAAGGAC GTGCGTGCGT GCGTGCGTGC GTGCGTGCGT GCGTGCGTCA
2881 CCAAGGTGTG TGGAGCTCAG GATCGCAGCC ATACACGCAA CTCCAGATGA TACCACTACC
2941 GCCAGTGTTT ACACAGAGGT TTCTGCCTGG CAAGCTTGGT ATTTTACAGT AGGTGAAGAT
3001 CATTCTGCAG AAGGGTGCTG GCACAGTGGA GCAGCACGGA TGTCCCCAGC CCCCCTTCTG
3061 GAAGACCCTA CAGCTGTGAG AGGCCCAGGG TTGAGCCAGA TGAAAGAAAA GCTGCGTGGG
3121 TGTGGGCTGT ACCCGGAAAA GGGCAGGTGG CAGGAGGTTT GCCTTGGCCT GTGCTTGGGC
3181 CGAGAACCAC ACTAAGGAGC AGCAGCCTGA GTTAGGAATC TATCTGGATT ACGGGGATCA
3241 GAGTTCCTGG AGAGTGGACT CAGTTTCTGC TCTGATCCAG GCCTGTTGTG CTTTTTTTTT
3301 TTCCCCCTTA AAAAAAAAAA AGTACAGACA GAATCTCAGC GGCTTCTAGA CTGATCTGAT
3361 GGATCTTAGC CCGGCTTCTA CTGCGGGGGG GAGGGGGGGA GGGATAGCCA CATATCTGTG
3421 GAGACACCCA CTTCTTTATC TGAGGCCTCC AGGTAGGCAC AAAGGCTGTG GAACTCAGCC
3481 TCTATCATCA GACACCCCCC CCAATGCCTT CATTGACCCC CTTCCCCCAG AGCCAAGGGC
3541 TAGCCCATCG GGTGTGTGTA CAGTAAGTTC TTGGTGAAGG AGAACAGGGA CGTTGGCAGA
3601 AGCAGTTTGC AGTGGCCCTA GCATCTTAAA ACCCATTGTC TGTCACACCA GAAGGTTCTA
3661 GACCTACCAC CACTTCCCTT CCCCATCTCA TGGAAACCTT TTAGCCCATT CTGACCCCTG
3721 TGTGTGCTCT GAGCTCAGAT CGGGTTATGA GACCGCCCAG GCACATCAGT CAGGGAGGCT
3781 CTGATGTGAG CCGCAGACCT CTGTGTTTAT TCCTATGAGC TGGAGGGGCT GGACTGGGTG
3841 GGGTCAGATG TGCTTGGCAG GAACTGTCAG CTGCTGAGCA GGGTGGTCCC TGAGCGGAGG
3901 ATAAGCAGCA TCAGACTCCA CAACCAGAGG AAGAAAGAAA TGGGGATGGA GCGGAGACCC
3961 ACGGGCTGAG TCCCGCTGTG GAGTGGCCTT GCAGCTCCCT CTCAGTTAAA ACTCCCAGTA
4021 AAGCCACAGT TCTCCGAGCA CCAAGTCTG CTCCAGCCGT CTCTTAAAAC AGGCCACTCT
4081 CTGAGAAGGA ATTC

```

FIG. 12B-1

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1      GCGAAGCTGG TCCGTTACAT TTGTAAGCAG AGGCAGTGCA AGCTGAGCGT GGCTCCCGGT
61     GAGAGGACCC CAGAGCTCAA CAGCTACCCC CGCTTCAGCG ACTGGCTGTA CACTTTCAAC
121    GTGAGGCCGG AGGTGGTGCA GGAGATCCCC CGAGACCTCA CGCTGGATGC CCTGCTGGAG
181    ATGAATGAGG CCAAGGTGAA GGAGACGCTG CGGCGCTGTG GGGCCAGCGG GGATGAGTGT
241    GGCCGTCTGC AGTATGCCCT CACCTGCCTG CGGAAGGTGA CAGGCCTGGC TTCATCACCC
301    CGCCCACCAC ACCCCAGCTG CGACGGCACA CCAAGCTGAA GCCACCACGG ACGCCCCCCC
361    CACCCAGCCG CAAGGTCTTC CAGCTGCTGC CCAGCTTCCC CACACTCACC CGGAGCAAGT
421    CCCATGAGTC TCAGCTGGGG AACCGCATTG ATGACGTCTC CTCGATGAGG TGAGTTGGGA
481    GCACGTTCTT GCACGTGGCT ATGCTGTGGG GCCTCTCTCA TGAGTCAGAG CGGAGGGAGA
541    CAGCTGTGCC TCTGGAGTCT GCTTTTAATT GTCTGGAAAT GCAGAGATGT CTGGTTTTTG
601    CCTGAGCAAA ATAGGAGTTT ATTTTTGTAC TATCCCGAGC TGGCTAAGGA GAGTCACGTA
661    GCTGTGGGCG GGGTCTTGGG GATGAGGAGG GGTACAGCAG GCAGGGACTA TGCTGAAGTG
721    GAGCTGGCTG TAGGAACCCC AGGGAGGCAC AGGGGGAGCA TGAAGAGGAG CTACACTTCC
781    TCCCTTAGT GCCCGGGCAG AAATCCCCAG GGCCCTTCAC AGAACCTTGG AGGAACATTC
841    AACACCCCCA TCTCTAGGAC AGCCCCAGCC TTGTCATCCT CCAATTGCTG TGGTAACACG
901    GGGACTGGAG CAGTGAGATT ATTAGGCCTT CAGGGCCAGT GTCTCCATGC AGATCAGATG
961    GAGGCGGTGC TTGGCACATA CACCACCTCA CTGCCCATGC CCCCAGAAGT TGGTGCAGAT
1021   CATAAGGTGG CTTTTGGGGC TAATTGATTG AAGTTCCAAC ATAGTCTGTT TCTCCTAGGC
1081   TGGTAGCTGG CACCTTTGGC CCCATGTGTT TTTTAATTAT TTTTCTTTT GAGACGAAAT
1141   CTCGCTCTAT CACCCAGGCT GAAGTGCAGT AGTGCAATCT CAGCTCACTG CAGCCTCTGC
1201   CTCCCGGGTT CAAGCAATTC TCCTGCCTCA GCCTCCCGAG TAGCCAGGAT TAAAGGTGCC
1261   TGCCACCACA CATGGCTAAT TTTTGTATTT TTAATAGAGA CGGGGTTTCA CCATGTTAGC
1321   CAGGCTGGTC TCAAATCCTT GACCTCAGGT GATCTTCCTG CCTCAGCCTC CCAAAGTGCT
1381   GGGATTACAG GTGTGAGCCA CTGCGCCCAG TCATGCCCAT GTGTTTTGGT GGTCTTGGCT
1441   GCTGATGGGT GGGGTGAGCC CCAGGAGGAA GTTGGGACAA GTCAACCTCA TGGCAGATGT
1501   GCCAGGGAGA GCTGCGGGTG AGATAGATTG TTCCTATCCC CCTCTCCTTG ATGTGGGAGG
1561   ACTCAGTACC TCCAGCACAC CTTTCTCATG GAGGTGGTGT ATGTGGTACT TGGCCTCAAG
1621   TGAACCAGCA CTTTCATGAGT CCAGCTTTGT GCTAGACCAG CACTTGGGAT TGAGGGGGGC
1681   AGTGGCCACC CTCGGGGGAC CTTCTGACTC AGAGGACATG AGATGGCCAC ACTCGAGCAC
1741   TGTGTTCCCTG ACCTTTCTGG GTCACAGGTC ACCTTGATGA TTGGATGAAA GTCTTAGATC
1801   TTCTTTCCAG AGAAAAGTCT ACAACATTCT ACTGAACCAG TCCAGAGGGT TCCCGGACCC
1861   CCGAAGCCCA CCCATGGGCT GGCTCTGGGA GGCAATGGCG CTGAGTATGG GGGCATCTCT
1921   CGCATGGATC CCCACAGATG GTACGGAGGG ATATCGGGCT GTCGGTGACG CACAGGTTCT
1981   CCACCAAGTC CTGGCTGTCT CAGGTCTGCC ACGTGTGCCA GAAGAGCATG ATATTTGGAG
2041   TGAAGTGCAA GCATTGCAGG TTGAAGTGTC ACAACAAATG TACCAAAGAA GCCCTGCCT
2101   GTAGAATATC CTCCTGCCA CTAACCTCGC TTCGGAGGAC AGAATCTGTC CCCTCGGACA
2161   TCAACAACCC GGTGGACAGA GCAGCCGAAC CCCATTTTGG AACCTCCCC AAAGCACTGA
2221   CAAAGAAGGA GCACCCTCCG GCCATGAATC ACCTGGACTC CAGCAGCAAC CCTTCCTCCA
2281   CCACCTCCTC CACACCCTCC TCACCGGCGC CCTTCCCGAC ATCATCCAAC CCATCCAGCG

```

FIG. 12B-2

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2341 CCACCACGCC CCCCAACCCC TCACCTGGCC AGCGGGACAG CAGGTTCAAC TTCCCAGCTG
2401 CCTACTTCAT TCATCATAGA CAGCAGTTTA TCTTTCAGCA CATTTAGCC TTTGCACACG
2461 CAGCCCCGCT CCCTGAAGCT GCCGACGGTA CCCGGCTCGA TGACCAGCCG AAAGCAGATG
2521 TGTTGGAAGC TCACGAAGCG GAGGCTGAGG AGCCAGAGGC TGGCAAGTCA GAGGCAGAAG
2581 ACGATGAGGA CGAGGTGGAC GACTTGCCGA GCTCTCGCCG GCCCTGGCGG GGCCCCATCT
2641 CTCGCAAGGC CAGCCAGACC AGCGTGTAAC TGCAGGAGTG GGACATCCCC TTCGAGCAGG
2701 TAGAGCTGGG CGAGCCCATC GGGCAGGGCC GCTGGGGCCG GGTGCACCGC GGCCGCTGGC
2761 ATGGCGAGGT GGCCATTTCG CTGCTGGAGA TGGACGGCCA CAACCAGGAC CACCTGAAGC
2821 TCTTCAAGAA AGAGGTGATG AACTACCGGC AGACGCGGCA TGAGAACGTG GTGCTCTTCA
2881 TGGGGGCGCT CATGAACCCG CCCACCTGG CCATTATCAC CAGCTTCTGC AAGGGGCGGA
2941 CGTTGCACTC GTTTGTGAGG GACCCCAAGA CGTCTCTGGA CATCAACAAG ACGAGGCAAA
3001 TCGCTCAGGA GATCATCAAG GGCATGGGAT ATCTTCATGC CAAGGGCATC GTACACAAAG
3061 ATCTCAAATC TAAGAACGTC TTCTATGACA ACGGCAAGGT GGTATCACA GACTTCGGGC
3121 TGTTTGGGAT CTCAGGCGTG GTCCGAGAGG GACGGCGTGA GAACCAGCTA AAGCTGTCCC
3181 ACGACTGGCT GTGCTATCTG GCCCCTGAGA TTGTACGCGA GATGACCCCC GGAAGGACG
3241 AGGATCAGCT GCCATTCTCC AAAGCTGCTG ATGTCTATGC ATTTGGGACT GTTTGGTATG
3301 AGCTGCAAGC AAGAGACTGG CCCTTGAAGA ACCAGGCTGC AGAGGCATCC ATCTGGCAGA
3361 TTGGAAGCGG GGAAGGAATG AAGCGTGTCC TGAATTCTGT CAGCTTGGGG AAGGAAGTCA
3421 GTGAGATCCT GTCGGCCTGC TGGGCTTTTC ACCTGCAGGA GAGACCCAGC TTCAGCCTGC
3481 TGATGGACAT GCTGGAGAAA CTTCCCAAGC TGAACCGGCG GCTCTCCCAC CCTGGACACT
3541 TCTGGAAGTC AGCTGAGTTG TAGGCCTGGC TGCCCTTGCAT GCACCAGGGG CTTTCTTCCT
3601 CCTAATCAAC AACTCAGCAC CGTGACTTCT GCTAAAATGC AAAATGAGAT GCGGGCACTA
3661 ACCCAGGGGA TGCCACCTCT GCTGCTCCAG TCGTCTCTCT CGAGGCTACT TCTTTTGCTT
3721 TGTTTTAAAA ACTGGCCCTC TGCCCTCTCC ACGTGGCCTG CATATGCCCA AG

```

FIG. 13A

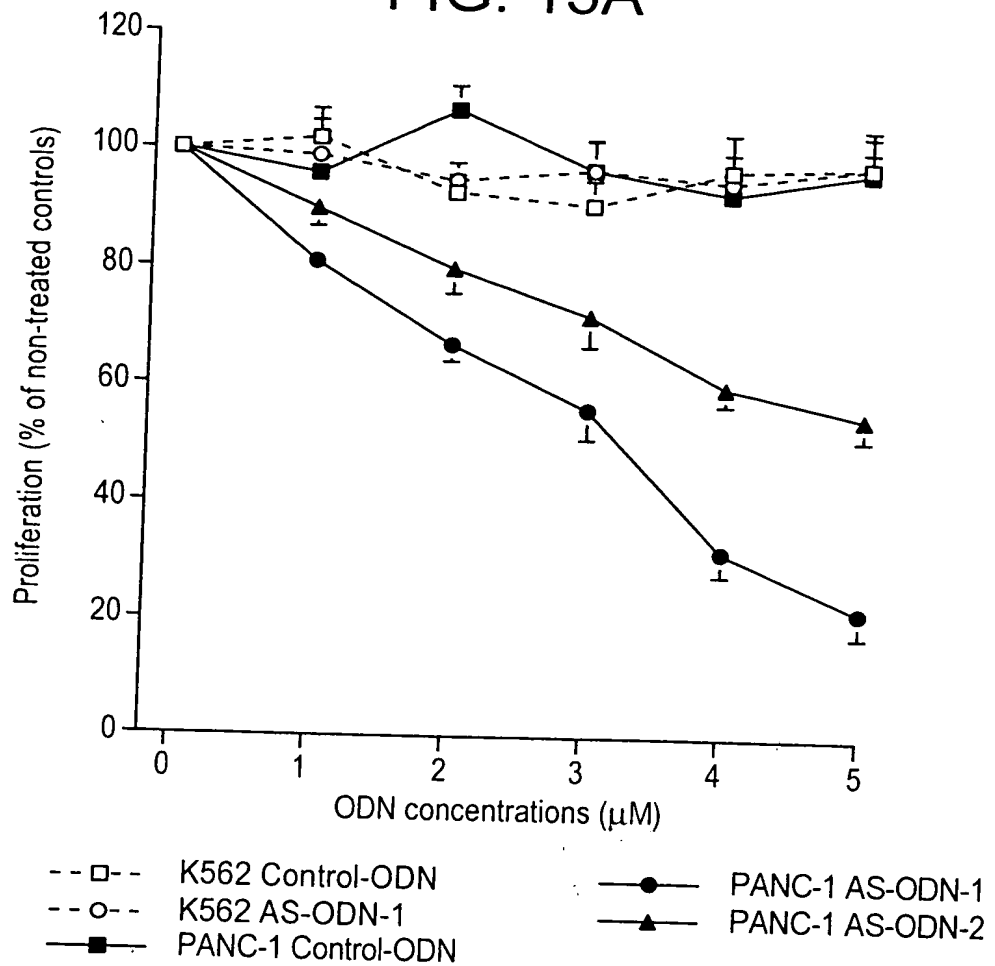


FIG. 13B

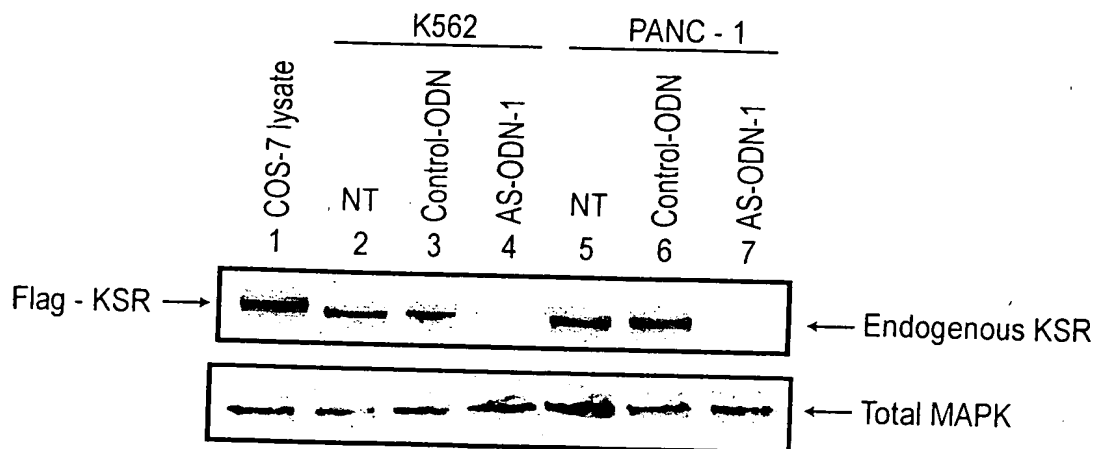


FIGURE 14

1	atgggagaga	aggagggcgg	tggcgggggg	gatgcggcgg	ccgcggaggg	tggcgcaggg
60	gccgcggcca	gccggggcgt	gcagcagtgt	gggcagctcc	agaagctcat	cgacatctcc
120	atcggcagtc	tgcgcgggct	gcgcaccaag	tgcgcagtgt	ctaacgacct	caccagcag
180	gagatacggg	ccctagaggc	aaagctggtc	cgttacattt	gtaagcagag	gcagtgaag
240	ctgagcgtgg	ctcccgttga	gaggacccca	gagctcaaca	gctacccccg	cttcagcgac
300	tggctgtaca	ctttcaacgt	gaggccggag	gtggtgcagg	agatcccccg	agacctcacg
360	ctggatgccc	tgttgagat	gaatgaggcc	aaggtgaagg	agacgctgcg	gcgctgtggg
420	gccagcgggg	atgagtgtgg	ccgtctgcag	tatgccctca	cctgcctgcg	gaaggtgaca
480	ggcctgggag	gggagcaca	ggaggactcc	agttggagtt	cattggatgc	gcggcgggaa
540	agtggctcag	ggccttccac	ggacaccctc	tcagcagcca	gcctgccctg	gccccaggg
600	agctcccagc	tgggcagagc	aggcaacagc	gcccagggcc	cacgctccat	ctccgtgtca
660	gctctgcccg	cttcagactc	ccccaccccc	agcttcagtg	agggcctctc	agacacctgt
720	attccccctg	acgccagcgg	cgggctgacc	ccccgtgccc	tgcacagctt	catcaccccg
780	cccaccacac	cccagctgcg	acggcacacc	aagctgaagc	caccacggac	gccccccca
840	cccagccgca	aggtcttcca	gctgctgccc	agcttcccca	cactcacccg	gagcaagtc
900	catgagtctc	agctggggaa	ccgcattgat	gacgtctcct	cgatgaggtt	tgatctctcg
960	catggatccc	cacagatggt	acggagggat	atcgggctgt	cggtgacgca	caggttctcc
1020	accaagtcct	ggctgtcgca	ggctgtccac	gtgtgccaga	agagcatgat	atttggagtg
1080	aagtgcgaagc	attgcagggt	gaagtgtcac	aacaaatgta	caaagaagc	ccctgcctgt
1140	agaatactct	tcctgccact	aactcggctt	cggaggacag	aatctgtccc	ctcggacatc
1200	aacaaccggg	tggacagagc	agccgaaccc	cattttggaa	ccctcccca	agcactgaca
1260	aagaaggagc	accctccggc	catgaatcac	ctggactcca	gcagcaaccc	ttcctccacc
1320	acctcctcca	cacctctctc	acccggcgcc	ttcccgacat	catccaaccc	atccagcgcc
1380	accacgcccc	ccaacccctc	acctggccag	cgggacagca	ggttcaactt	ccagctgccc
1440	tacttcattc	atcatagaca	gcagtttata	ttccagaca	tttcagcctt	tgcacacgca
1500	gccccgctcc	ctgaagctgc	cgacggtaac	cggctcgatg	accagccgaa	agcagatgtg
1560	ttggaagctc	acgaagcgga	ggctgaggag	ccagaggctg	gcaagtcaga	ggcagaagac
1620	gatgaggacg	aggtggacga	cttgccgagc	tctcgccggc	cctggcgggg	ccccatctct
1680	cgcaaggcca	gccagaccag	cgtgtacctg	caggagtggg	acatccccct	cgagcaggta
1740	gagctgggcg	agcccatcgg	gcagggccgc	tggggccggg	tgcaccgcgg	ccgctggcat
1800	ggcgagggtg	ccattcgcct	gctggagatg	gacggccaca	accaggacca	cctgaagctc
1860	ttcaagaaag	aggtgatgaa	ctaccggcag	acgcggcatg	agaacgtggt	gctcttcatg
1920	ggggcctgca	tgaaccgcgc	ccacctggcc	attatcacca	gcttctgcaa	ggggcggacg
1980	ttgcactcgt	ttgtgagggg	ccccaagacg	tctctggaca	tcaacaagac	gaggcaaatc
2040	gctcaggaga	tcataaaggg	catgggatat	cttcatgcca	agggcatcgt	acacaaagat
2100	ctcaaatacta	agaacgtctt	ctatgacaac	ggcaagggtg	tcatacacaga	cttcgggctg
2160	tttgggatct	caggcgtggt	ccgagaggga	cggcgtgaga	accagctaaa	gctgtccac
2220	gactggctgt	gctatctggc	ccctgagatt	gtacgcgaga	tgacccccgg	gaaggacgag
2280	gatcagctgc	cattctccaa	agctgctgat	gtctatgcat	ttgggactgt	ttggtatgag
2340	ctgcaagcaa	gagactggcc	cttgaagaac	caggctgcag	aggrcatccat	ctggcagatt
2400	ggaagcgggg	aaggaatgaa	gcgtgtcctg	acttctgtca	gcttggggaa	ggaagtcagt
2460	gagatcctgt	cggcctgctg	ggcttttcgac	ctgcaggaga	gacccagctt	cagcctgctg
2520	atggacatgc	tggagaaact	tcccaagctg	aaccggcgcc	tctcccaccc	tggacacttc
2580	tgggaagtcag	ctgagttgta	g			

FIGURE 15

atgggagagaaggagggcggtggcggggggggatgcgggcgccgcgagggtggcgagggg
M G E K E G G G G G D A A A A E G G A G 20

gccgcgccagccggggcgctgcagcagtggtgggcagctccagaagctcatcgacatctcc
A A A S R A L Q Q C G Q L Q K L I D I S 40
CA1 (32-72)

atcggcagctctggcggggctgcgccaccaagtgcgcagtgcttaacgaacctcaccagcag
I G S L R G L R T K C A V S N D L T Q Q 60
AS-ODN3 (42-47) AS-ODN2 (52-57)

gagatacgggacccctagaggcacaagctgggtccgttacatttgaagcagaggcagtgcaag
E I R T L E A K L V R Y I C K Q R Q C K 80
AS-ODN1 (63-68)

ctgagcgtgggtcccggtgagaggaccccagagctcaacagctacccccgcttcagcgac
L S V A P G E R T P E L N S Y P R F S D 100

tggctgtacacttttcaacgtgaggccggaggtggtgcaggagatccccgagacctcacg
W L Y T F N V R P E V V Q E I P R D L T 120

ctggatgccctgctggagatgaatgaggccaaggtgaaggagacgctgcggcgctgtggg
L D A L L E M N E A K V K E T L R R C G 140

gccagcggggatgagtggtggcgctctgcagtatgccctcacctgcctgcggaaggtgaca
A S G D E C G R L Q Y A L T C L R K V T 160

ggcctgggaggggagcacaaggaggactccagttggagttcattggatgcgcgggcgga
G L G G E H K E D S S W S S L D A R R E 180

agtggctcagggccttccacggacacctctcagcagccagcctgccctggccccccaggg
S G S G P S T D T L S A A S L P W P P G 200

agctcccagctgggcagagcaggcaacagcgcccagggcccacgctccatctccgtgtca
S S Q L G R A G N S A Q G P R S I S V S 220

gctctgcccgcctcagactccccccacccccagcttcagtgagggcctctcagacacctgt
A L P A S D S P T P S F S E G L S D T C 240

attccccctgcacgccagcgggcggtgaccccccggtgccctgcacagcttcacccccg
I P L H A S G R L T P R A L H S F I T P 260

cccaccacacccccagctgcgacggcacaccaagctgaagccaccacggacgccccccca
P T T P Q L R R H T K L K P P R T P P P 280

cccagcgcgaaggtcttccagctgctgcccagcttccccacactcaccggagcaagtcc
P S R K V F Q L L P S F P T L T R S K S 300
CA2 (277-289)

catgagttctcagctggggaaccgcattgatgacgtctcctcgatgaggtttgatctctcg
H E S Q L G N R I D D V S S M R F D L S 320

catggatccccacagatggtacggagggatatcgggctgtcggtgacgcacaggttctcc
H G S P Q M V R R D I G L S V T H R F S 340

accaagtccctggctgtcgcaggtctgccacgtgtgccagaagagcatgatatttggagt
T K S W L S Q V C H V C Q K S M I F G V 360
CA3 (335-380)

aagtgcgaagcattgcaggttgaagtgtcacacaaatgtaccaaagaagcccctgcctgt
K C K H C R L K C H N K C T K E A P A C 380

FIGURE 15 (cont'd)

agaatatccttccctgccactaactcggcttcggaggacagaatctgtcccctcggacatc
R I S F L P L T R L R R T E S V P S D I 400

aacaacccggtggacagagcagccgaaccccatTTTtgaaccctccccaagcactgaca
N N P V D R A A E P H F G T L P K A L T 420

aagaaggagcaccctccggccatgaatcacctggactccagcagcaacccttcctccacc
K K E H P P A M N H L D S S S N P S S T 440

acctcctccacaccctcctcaccggcgcccttcccgcacatcatccaacccatccagcgcc
T S S T P S S P A P F P T S S N P S S A 460

CA4 (432-498)

accacgcccccaacccctcacctggccagcgggacagcaggttcaacttcccagctgcc
T T P P N P S P G Q R D S R F N F P A A 480

tacttcattcatcatagacagcagtttatctttccagacatttcagcctttgcacacgca
Y F I H H R Q Q F I F P D I S A F A H A 500

gccccgctccctgaagctgccgacggtacccggctcgatgaccagccgaaagcagatgtg
A P L P E A A D G T R L D D Q P K A D V 520

ttggaagctcacgaagcggaggtgaggagccagaggctggcaagtcagaggcagaagac
L E A H E A E A E E P E A G K S E A E D 540

gatgaggacgaggtggacgacttgccgagctctcgccggccctggcggggcccatctct
D E D E V D D L P S S R R P W R G P I S 560

cgcaaggccagccagaccagcgtgtacctgcaggagtgggacatcccccttcgagcaggta
R K A S Q T S V Y L Q E W D I P F E Q V 580

gagctgggcgagcccatcgggcagggccgctggggccgggtgcaccgcggccgctggcat
E L G E P I G Q G R W G R V H R G R W H 600

CA5 (565-836, consisting of 11 conserved subdomains)

ggcgaggtggccattcgctgctggagatggacggccacaaccaggaccacctgaagctc
G E V A I R L L E M D G H N Q D H L K L 620

ttcaagaaaagaggtgatgaactaccggcagacgcggcatgagaacgtggtgctcttcag
F K K E V M N Y R Q T R H E N V V L F M 640

ggggcctgcatgaacccgccccacctggccattatcaccagcttctgcaagggcgcgacg
G A C M N P P H L A I I T S F C K G R T 660

ttgcactcgTTTTgtgagggaccccaagacgtctctggacatcaacaagacgaggcaaac
L H S F V R D P K T S L D I N K T R Q I 680

gctcaggagatcatcaagggcatgggatatcttcagccaagggcatcgtaacaaaagat
A Q E I I K G M G Y L H A K G I V H K D 700

ctcaaataaagaacgtcttctatgacaacggcaaggtgggtcatcacagacttcgggctg
L K S K N V F Y D N G K V V I T D F G L 720

tttgggatctcaggcgtggtccgagagggacggcgtgagaaccagctaaagctgtcccac
F G I S G V V R E G R R E N Q L K L S H 740

gactggctgtgctatctggccctgagattgtacgcgagatgacccccgggaaggacgag
D W L C Y L A P E I V R E M T P G K D E 760

FIGURE 15 (cont'd)

gatcagctgccattctccaaagctgctgatgtctatgcatttgggactgtttggtatgag
D Q L P F S K A A D V Y A F G T V W Y E 780

ctgcaagcaagagactggcccttgaagaaccaggctgcagagggcatccatctggcagatt
L Q A R D W P L K N Q A A E A S I W Q I 800

ggaagcggggaaggaatgaagcgtgtcctgacttctgtcagcttggggaaggaagtcagt
G S G E G M K R V L T S V S L G K E V S 820

gagatcctgtcggcctgctgggctttcgacctgcaggagagaccagcttcagcctgctg
E I L S A C W A F D L Q E R P S F S L L 840

atggacatgctggagaaaacttcccaagctgaaccggcggctctcccacctggacacttc
M D M L E K L P K L N R R L S H P G H F 860

tggaagtcagctgagttgtag
W K S A E L -

FIGURE 16

Atgggatagagcggcggttgcgcgcgccagcgcgatgggagagaaaaaggagggcgggcgggcggg
M D R A A L R A A A M G E K K E G G G G 20

Ggcgcgcggcgggacgggggagcagggggccgctcagccggcgctgcagcagtgccggc
G A A A D G G A G A A V S R A L Q Q C G 40

Cagctgcagaagctcatcgatatctccatcgccagctctgcgggggctgcgcaccaagtgc
Q L Q K L I D I S I G S L R G L R T K C 60
CA1 (42-81) AS-ODN3 (51-56)

tcagtggtctaacgacctcacacagcaggagatccggaccttagaggcaagctggtgaaa
S V S N D L T Q Q E I R T L E A K L V K 80
AS-ODN2 (61-66) AS-ODN1 (72-77)

tacatttgcaagcagcagcagagcaagcttagtgtagccccaagcgacaggaccgcccag
Y I C K Q Q Q S K L S V T P S D R T A E 100

ctcaacagctaccacgcttcagtgactggctgtacatcttcaacgtgaggcctgaggtg
L N S Y P R F S D W L Y I F N V R P E V 120

gtgcaggagatcccccaagagctcacactggatgctctgctggagatggacgaggccaaa
V Q E I P Q E L T L D A L L E M D E A K 140

gccaaggagatgctgcggcgctggggggccagcacggaggagtgcagccgcctacagcaa
A K E M L R R W G A S T E E C S R L Q Q 160

gcccttacctgccttcggaaggtgactggcctgggaggggagcacaaaatggactcaggt
A L T C L R K V T G L G G E H K M D S G 180

tggagttcaacagatgctcgagacagtagcttggggcctcccatggacatgctttcctcg
W S S T D A R D S S L G P P M D M L S S 200

ctgggcagagcgggtgccagcactcagggaccccggtccatctccgtgtccgcctgcct
L G R A G A S T Q G P R S I S V S A L P 220

gcctcagactctccgggtccccggcctcagtgagggcctctcggactcctgtatcccccttg
A S D S P V P G L S E G L S D S C I P L 240

cacaccagcggcggtgacccccgggacctgcacagcttcatcacgccccctaccaca
H T S G R L T P R A L H S F I T P P T T 260

ccccagctacgacggcagccaagctgaagccaccaaggacacccccaccgccaagccgc
P Q L R R H A K L K P P R T P P P P S R 280
CA2 (274-286)

aaggtcttccagctgctccccagcttccccacactcacacggagcaagtcccacgagtc
K V F Q L L P S F P T L T R S K S H E S 300

cagctgggaaaccgaatcgacgagctcaccccgatgaagtttgaactccctcatggatcc
Q L G N R I D D V T P M K F E L P H G S 320

ccacagctgggtacgaagggatatcgggctctcgggtgacgcacaggttctccacaaagtca
P Q L V R R D I G L S V T H R F S T K S 340

tggttgctcacaggtgtgcaacgtgtgccagaagagcatgatttttggcgtgaagtgcaaa
W L S Q V C N V C Q K S M I F G V K C K 360
CA3 (331-377)

FIGURE 16 (cont'd)

cactgcagggttaaaatgccataacaagtgcacaaaggaagctcccgctgcaggatcacc
H C R L K C H N K C T K E A P A C R I T 380

ttcctcccactggccagggttcggaggacagagtctgtcccgtcagatatcaacaaccca
 F L P L A R L R R T E S V P S D I N N P 400

gtggacagagcagcagagccccattttggaacccttcccaaggccctgacaaagaaggag
 V D R A A E P H F G T L P K A L T K K E 420

caccctccagccatgaacctggactccagcagcaacccatcctccaccacgtcctccaca
 H P P A M N L D S S S N P S S T T S S T 440

ccctcatcgccggcacctttcctgacctcatctaatccctccagtgccaccacgcctccc
P S S P A P F L T S S N P S S A T T P P 460

CA4 (428-480)

aaccggtcacctggccagcgggacagcaggttcagcttcccagacatttcagcctgttct
N P S P G Q R D S R F S F P D I S A C S 480

caggcagccccgctgtccagcacagccgacagtacacggctcgacgaccagcccaaaaca
 Q A A P L S S T A D S T R L D D Q P K T 500

gatgtgctaggtgttcacgaagcagaggctgaggagcctgaggctggcaagtcagaggca
 D V L G V H E A E A E E P E A G K S E A 520

gaggatgacgaggaggatgaggtggacgacctccccagctcccgccggccctggaggggc
 E D D E E D E V D D L P S S R R P W R G 540

cccatctctcgaaaggccagccagaccagcgtttacctgcaagagtgggacatccccttt
 P I S R K A S Q T S V Y L Q E W D I P F 560

gaacaggtggaactgggagcagccattggacagggctcgctggggccgggtgcaccgaggc
E Q V E L G E P I G Q G R W G R V H R G 580

CA5 (548-819, consisting of 11 conserved subdomains)

cgttggcatggcgaggtggccattcggtgctggagatggacggccacaatcaggaccac
R W H G E V A I R L L E M D G H N Q D H 600

ctgaagctgttcaagaaagaggtgatgaactaccggcagacgcggcatgagaacgtggtg
L K L F K K E V M N Y R Q T R H E N V V 620

ctcttcatgggggcctgcatgaaccacctcacctggccattatcaccagcttctgcaag
L F M G A C M N P P H L A I I T S F C K 640

ggcgagcattgcattcattcgtgagggaccccaagacgtctctggacatcaataagact
G R T L H S F V R D P K T S L D I N K T 660

aggcagatcgcccaggagatcatcaaggcatgggttatcttcatgcaaaaggcatcgtg
R Q I A Q E I I K G M G Y L H A K G I V 680

cacaaggacctcaagtccaagaatgtcttctatgacaacggcaaagtgggtcatcacagac
H K D L K S K N V F Y D N G K V V I T D 700

ttcgggctgtttgggatctcggtgtggtccgagaggaacggcgcgagaaccaactgaaa
F G L F G I S G V V R E E R R E N Q L K 720

ctgtcacatgaactggctgtgctacctggcccccgagatcgtagagaaatgatccccggg
L S H D W L C Y L A P E I V R E M I P G 740

FIGURE 16 (cont'd)

cgggacgaggaccagctgcccttctccaaagcagccgatgtctatgcattcgggactgtg
R D E D Q L P F S K A A D V Y A F G T V 760

tggtatgaactacaggcaagagactggccctttaagcaccagcctgctgaggccttgatc
W Y E L Q A R D W P F K H Q P A E A L I 780

tggcagattggaagtggggaaggagtaaggcgctcctggcatccgtcagcctggggaag
W Q I G S G E G V R R V L A S V S L G K 800

gaagtcggcgagatcctgtctgcctgctgggctttcgatctgcaggagagaccagcttc
E V G E I L S A C W A F D L Q E R P S F 820

agcctgctgatggacatgctggagaggctgccaagctgaaccggcggtctctccaccct
S L L M D M L E R L P K L N R R L S H P 840

gggcacttttggaagtgcggtgacattaacagcagcaaagtcatgccccgctttgaaagg
G H F W K S A D I N S S K V M P R F E R 860

Tttggcctggggaccctggagtcggtaatccaaagatgtag
F G L G T L E S G N P K M - 880

FIGURE 17

1	atggggagaga	aggagggcg	tgccgggggg	gatgcggcgg	ccgcggaggg	tgccgcaggg
60	gccgcggcca	gccggggcgt	gcagcagtg	gggcagctcc	agaagctcat	cgacatctcc
120	atcggcagtc	tgccggggct	gcgcaccaag	tgccgagtg	ctaaccgacct	caccagcag
180	gagataccga	ccctagaggg	aaagctggtc	cgttacattt	gtaagcagag	gcagtgcaag
240	ctgagcgtgg	ctcccgggtga	gaggaccca	gagctcaaca	gctacccccg	cttcagcgac
300	tggtctgtaca	ctttcaacgt	gaggccggag	gtgggtgcagg	agatcccccg	agacctcag
360	ctggatgccc	tgctggagat	gaatgaggcc	aagggtgaagg	agacgctgcg	gcgctgtggg
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480	ggcctggggag	gggagcaca	ggaggactcc	agttggagtt	cattggatgc	gcggcgggaa
540	agtggctcag	ggccttccac	ggacaccctc	tcagcagcca	gcctgcctcg	gccccaggg
600	agctcccagc	tgggcagagc	aggcaacagc	gcccagggcc	cacgctccat	ctccgtgtca
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1080	aagtgcgaagc	attgcagggt	gaagtgtcac	aacaaatgta	ccaaagaagc	ccctgcctgt
1140	agaatatect	tcttgccact	aactcggctt	cggaggacag	aatctgtccc	ctcggacatc
1200	aacaacccgg	tggacagagc	agccgaaccc	cattttggaa	ccctcccca	agcactgaca
1260	aagaaggagc	accctccggc	catgaatcac	ctggactcca	gcagcaaccc	ttcctccacc
1320	acctcctcca	caccctctct	accggcgccc	ttcccagatc	catccaaccc	atccagcgcc
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2280	gatcagctgc	cattctccaa	agctgctgat	gtctatgcat	ttgggactgt	ttggtatgag
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2520	atggacatgc	tggagaaact	tcccaagctg	aaccggcggc	tctccacc	tggacacttc
2580	tggaagtcag	ctgaattgta	g			

FIGURE 18

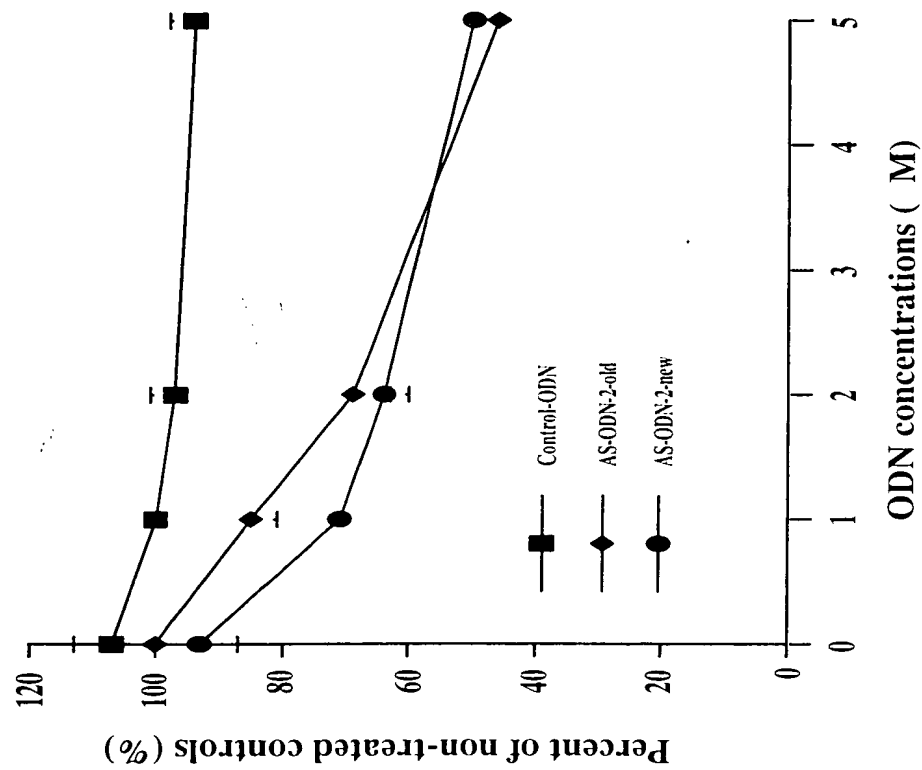
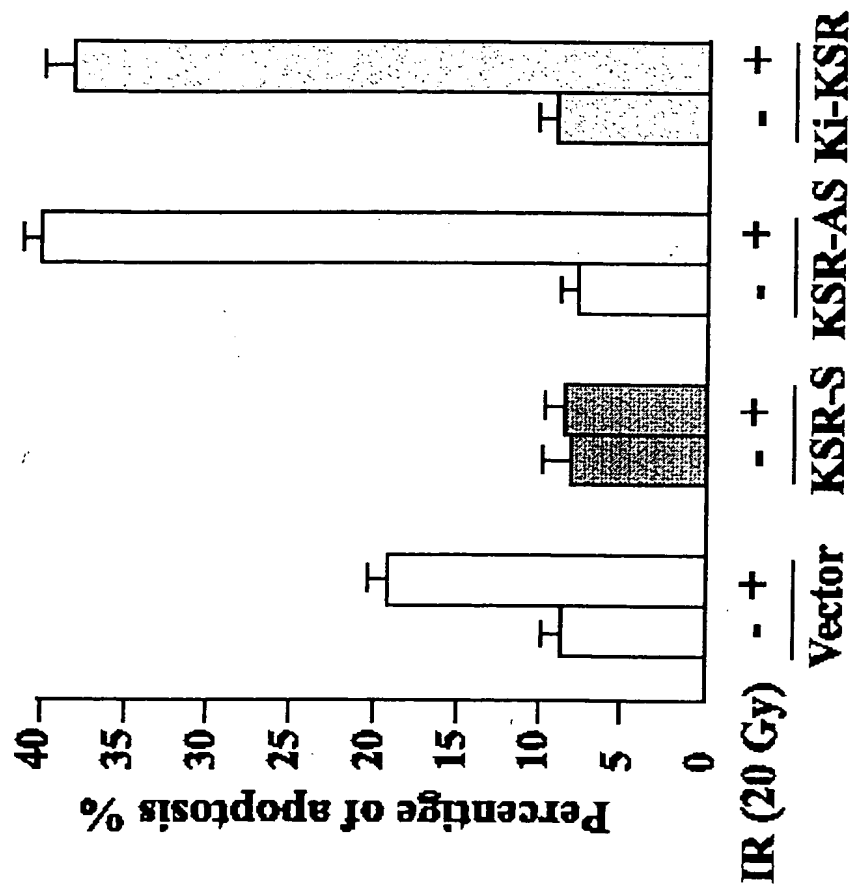


Figure 19. Proliferation assay of PANC-1 cells treated with old- and new- KSR AS-ODN2

FIGURE 19



Inactivation of KSR1 by KSR-AS sensitizes A431 cells to ionizing radiation-induced apoptosis

FIGURE 20

